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## In This Issue

### Physico-dermo-Therapy

A. Joseph Riviere, Sc.D., M.D.

### Modern Biochemistry in the Service of Medicine

F. E. Chidester, A.M., Ph.D.

### Are the Professions Becoming Commercialized?

William Lathrop Love, M.D.

### Notes on Internal Medicine

Malford W. Thewlis, M.D.

### Prognosis in Malignant Disease

Henry Clarke Coe, M.D.

### Social Medicine

Complete Index to Reading Pages on Page 17

OCTOBER, 1928



## To Relieve A Functional Trouble Common Among Women

IT is well recognized that many women, even those who normally have good elimination, are subject to constipation in connection with menstruation—especially during the week preceding the flow.

This may be aggravated by:—(1) a congestion of the pelvic organs, and (2) a diminution of water in the feces. At such times there is a decrease of moisture in the whole system, due to the increased output of

urine and greater perspiration just before menstruation.

To relieve this form of constipation, Nujol is needed, rather than laxatives and cathartics which tend to draw water from the system or are too drastic in their action. Doctors have found that if women take Nujol for the week preceding menstruation, they not only avoid constipation, but are less apt to suffer pain and discomfort during the menstrual period.

# Nujol

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## Physico-dermo-Therapy

### Clinical Physiotherapy of the Skin

A. JOSEPH RIVIÈRE, Sc.D., M.D.  
Paris

"Principal théâtre des crises, la peau est douée de perméabilité et d'une forte énergie nerveuse, afin que la Nature dirige vers elle les mouvements de sa force médicatrice."

(HUFELAND.)

#### 1.—Clinical Physiotherapy of the Skin

Physiotherapy acts directly and indirectly on the skin: DIRECTLY, through the terminal extremities of the peripheral nerves; through the dermo-epidermic nutrition, which stabilises and regenerates the cellular renovation; through the tegumentary allergia of the glandular, sebaceous and sudoriparous functions. The elimination of refuse, the perfecting of the perspiratory function, the tissue exaltation thanks to the activation of the exchanges, succeeding the cleansing of the teguments, expelling the integrality of human toxins. All these curative processes are realised through the autocracy of the nervous system.

It acts INDIRECTLY, through the thorough modification of systemic morbidity; complete detoxication and organic vitalization are effected. "Tout consent, concours, et conspire, dans le corps vivant", said Hippocrates. To support and stimulate the vital strength, by increasing the potential of "nervism"—I mean the ruling energy of the nervous system—such is the rôle attributed to physiotherapy, which, by acting on the peripheral nerves, modifies all the organs, and particularly the liver.

When the physical agents are applied with sufficient perseverance to cases of dermatosis, the result is always satisfactory. But no matter what therapeutic value the physical agent may have the practitioner should not limit himself to one modality. It is absolutely nec-

essary to have a combined action, and to group and multiply in numbers all the agents favourable to a rational cure.

The narrow solidarity relating "nervism" and dermatopathies is anatomically explained by the common origin (blastodermic) of the skin and the nervous system. Besides, modern physiology considers the cutaneous tissue as a surface, widely spread over nervous terminations. Thus, an idea can be formed of the value of the physical agents against pruritus, neurodermitis (zona), cutaneous trophoneurosis, erythema and vasomotor disturbances. Is not the central nervous system directly bound up with the dermic papillae, by the intermediary cords which harmonise the centrifugal and centripetal innervations? Whatever it may be, numerous dermatoses (herpes, lichen, vitiligo, pelade, etc.) are undeniably of nervous origin: psoriasis has even been described as caused by a physical commotion or by a psychical shock.

Certain cutaneous affections, well classed, are closely related to hepatic and gastro-intestinal perturbations. There is scarcely a visceral morbidity which is not reflected on the skin and that is what explains the happy influence of lumbo-abdominal and electro-thermo penetration on manifestations of urticaria and eczema, for example. In cases of nutritional defects, certain waste matters are eliminated by the skin which are normally carried off by other emunctories. Other symptoms allied to arthritism, herpetism, and scrofulo-tuberculosis are concurrently observed. Then there is need for an organic depuration by diuretics (diet-drinks), laxatives and cholagogues (principally calomel and castor oil) which, with an appropriate diet, will prevent those

troublesome humoral reactions which give rise to so many injurious skin efflorescences.

Copious meals, deviations from proper diet, restaurant food and a too rich alimentation (or simply an excessive quantity of bread or meat) create, in sedentary subjects (who oxidize insufficiently) toxic states, at first fertile in visceral and nutritional troubles, afterwards in tegumentary reflections, of which pruritus, eczema, urticaria, erythema, acne and herpes are the commonest manifestations.

A diet poor in potential toxins and favourable to the proper functioning of the liver, stomach, intestines and renal emunctory, if not physiotherapy, is at least "physiatric" and of great value. It is elementary that those predisposed to dermatoses should refrain from eating fish, mollusks, crustacea, salted food, games, pork, fermented cheese, strawberries, raspberries, nuts, sorrel, pure wine, liqueurs, coffee, tea, chocolate, kola, fresh bread, pastries, sweetmeats, greasy soup, and hors d'oeuvre, which, in general, are frequently hostile to the cure of dermatoses.

The Roentgen rays, effluves of high frequency, actinotherapy, ultraviolet rays and static baths are amongst the agents which act best in reviving and equilibrating "nervism," while exciting the necessary organic depuration. In experienced hands, these agents constitute an excellent curative medication for all kinds of dermopathies.

Reviewing the principal dermatoses subject to diverse radiations, we shall see that a complete set of apparatus is necessary to respond to the most current curative indications, not only as topical treatments eminently modifying, but also to rectify a generally defective condition; for dermatosis is rarely a disease, "of the bark", it is the tree trunk itself which is ill. *It is the usual reflection of hepatic insufficiency and the disharmony of "nervism."*

## 2.—Radiotherapy

At the present moment, the Roentgen rays represent the best treatment for tinea (ringworm), sycosis, cheloids, warts and orificial pruritus. The mild rays, in feeble doses, render great service for the cure of eczema in general, and psoriasis in particular. For lupus and cutaneous epithelioma, the rays at the shortest wave lengths must be utilised. It is known that the X-rays possess a greater or lesser penetration, according as the rays are mild or hard. The shortest wave length makes the rays deeper, more destructive and sclerogenous. The nerve cells are the most resistant to the X-rays which stimulate them and intensify their power.

The special elective action of Roentgenisation on the diseased tissues (whose exclusiveness I was the first to point out, by observing the radio-resistance of the healthy cells) could not but render great service in dermatotherapy, notably in the treatment of cheloids, epithelioma, ulcus rodens, etc. It cures the most rebellious cutaneous cancers when the shortest wave lengths are used, which always respect the integrity of the normal teguments. Its quick, painless action, fertile in good esthetic results, forms the basis of dermatotherapy. (See my communication to the Academy of Medicine, Paris, 1903.)

According to the recent works of Lacassagne, the phenomena of cellular radio-sensibility are not conditioned by the morphological characteristics of the eruption. They result, as I pointed out in 1900 and 1903, from the reproducing activity of the cells, from their more or less marked fragility, from the indications as regards pain, and above all from the brevity of their cellular existence. Probably, as a result of a kind of col-

loidoclastic shock, the white corpuscles are attracted in great numbers towards the irradiated region; it is this hyperleucocytosis, conditioned by "nervism," which certainly plays the greatest part in the molecular modifications ending in cure.

When cicatricial transmutation, without previous tissue destruction, is aimed at, in the cure of anogenital pruritus, cheloids, rebellious acne, tuberosus angioma, and precancerous keratosis, care must be taken in measuring the degree of penetration of the rays and the duration of their application.

Radiotherapy possesses a power of rejuvenescence by the excitation of hemopoiesis. It stimulates all the emunctories, and notably diuresis, expedites elimination of uric acid, exercises a sedative and hypotensive, and at the same time anti-toxic action and corrects the neurotrophic disorders of the teguments in arthritic subjects who constitute the majority of dermopathies. By favouring local vascularisation and calorification it allows the nerve cell to defend itself with vigour and hastens the resolution of the tegumentary lesions, restoring to the skin its suppleness, colouring and normal esthesia.<sup>1</sup>

## 3.—Ultraviolet Rays

The success of the ultraviolet rays is due to their innocuity, added to their tonic, restorative and sedative power over the diathetic, weakened or spasmophilic organism. In utilising ultraviolet, combined with X-rays and effluves of high frequency, psoriasis, which is so rebellious to usual treatments, can, with oil of cade frictions, be perfectly cured. After the gradual disappearance of their neoplastic infiltrates, actinomycosis, sporotrichosis and xanthelasma are healed. The cicatricial tissue obtained is not, then, either white, hard or retractile: the skin regains its colour, normal aspect and pliancy. Hair never falls. The atonic and sanious ulcers are cicatrised after having budded thoroughly. The cracks and chaps of the breasts close and their relapse is generally prevented.

Microbes are very vulnerable to the violet radiations, which also destroy toxins abundant in certain eruptions. The electric arc and the quartz lamp have well studied biological effects on humoral metabolism. They influence cellular ferments and agents of mutation and increase the lime, phosphorus and iron of the blood, which certainly contributes (in lupus, for example) to cover certain losses of dermo-cellular substances. Indeed the ultraviolet rays not only destroy the worn out and weakened tissues, they renew and regenerate them by the proliferation of the new, healthy cells. It is the defensive sensibilisation which by pigmentary production strengthens the curative effects of the rays. Let us remark here, that according to recent works, the melanoblasts like to deposit themselves on the nervous endings of the skin.

It is always well to associate the actinic topical action with that of high-frequency effluves, in treating a torpid dermatosis, whether it be an ulcer, a lupus, or a dry eruption. Applied in prudently progressive doses, this treatment is exempt from every erythematous complication (The erythema of the ultraviolet moreover presents no danger). A good pigmentation is the security and prelude of the cutaneous result, by exalting local vitality, and the pigment is much more abundant in the case of young subjects. I usually advise local, discontinuous or rhythmical ultraviolet rays (even sometimes intercalated with infra-red rays) and I have seen them succeed

<sup>1</sup> Convinced by experience that in dermatology the X-rays give better results than radium, I have not thought of giving a special paragraph to Radiumtherapy.



where everything else had failed: in seborrheic alopecia, rebellious pelade, mycosis, scleroderma, rosaceous acne, polymorphous erythema, psoriasis and pityriasis, xerodermic patches, verrucae, senile keratosis, sycosis, ecthyma, and Duhring's herpiform dermatitis. The violet ray always sterilises the pyodermites and favours epidermisation. It is an antiseptic which, far from injuring the tissues, re-inforces the cellular energy, activates the lymphatico-sanguine current and sterilises the local and general bacilli. As to the action of phototherapy on the nervous system, it is sufficiently demonstrated by the cure of the most rebellious pruritus, orificial and others.

With the co-operation of salicylated ionisation, we also cure, by the ultraviolet rays, plantar bromidrosis, often refractory to all treatments.

#### 4.—High Frequency and Diathermy.

The high-frequency sparks and effluves are efficacious against lesions of the derma. They particularly act by arterial vasodilatation, which brings on a recrudescence of nutrition, resolution, reparation and cicatrization. I recommend localised high frequency against rebellious furunculosis, folliculitis, sycosis, pelade at a tardy re-growth, zona and vitiligo (whose nervous origins are undeniable). Bactericide without destruction, the high-frequency effluve successfully modifies hypertrophic acne and rhinophyma, without causing any tumefying or painful reactions, but gradually modifying the pathological tissues and facilitating the molecular reabsorptions.

Side by side with high-frequency sparks and effluvia, a large place should be made for diathermy, which is, on the whole, only a modality of d'arsonvalisation. Applied twenty minutes every day, then every second day thirty minutes, between 500 and 1000 milliamperes, diathermy, by the calorigenous and excito-circulatory power of its current, increases the defensive potential of the cells against pathogenic agents and microbes, suppresses vascular spasm and fights local hypothermy. Diathermy works wonders against pruritus, hyperidrosis, lingering eczema and torpid dermatoses.

#### 5.—Thermo and Cryotherapy

Warm air (from 80 degrees to 100 degrees) provokes an active hyperemia of the tissues and vitalisation of the skin, by the activity given to the ameboid movements of the leucocytes and to the contractility of the protoplasm. Besides, every thermic agent gives rise to a dynamogenous, solvent and detergent revulsion on the part of the skin, which is a vast nervous surface. It also provokes osmotic and vasomotor reactions. But in dermatotherapy, it will be well to avoid a too brutal or violent caloric effect, which is a double-edged arm: the heat should be always dosed and graduated with a view to a normal vascular dilatation and a regulating diaphoresis.

Cryotherapy can be to-day very easily applied by the carbonic snow pencil, and benefits the vascular, verrucose, pilous and pigmentary naevi, lentigo, papilloma, senile marks and warts, cavernous angioma, and erythematous lupus; a useful auxiliary of the X-rays, the carbonic snow pencil acts above all in sero-cellular exudation, which effect is obtained without a too marked phlegmasiac reaction. It does not cause any ulterior cicatrix. The work of White and Pusey, and in France that of Pautrier and Lortat-Jacob, has shown that, in salient naevi, which are so ugly, cryotherapy effects improvement, thanks to vascular ischemia and obliteration. If the treatment is continued it solicits an escharotic elective action on the tumour and a vesicatory and destroying congelation of its elements.

#### 6.—Pruritus and Its Physiotherapeutic Treatment

Essential pruritus (or without lesion) is frequent at

the change of seasons, in nervous arthritics. In case of pruritus *sine materia* one must always look for diabetes, gout, albuminuria, minor uremia and hepatic insufficiency in order to amend these morbid factors. In old men, the regression of the dermo-epidermic tissues (for we grow old above all by the skin) causes senile prurigo, which is often difficult to get rid of. Gastro-intestinal fermentations, bradycardia, and bradytrophia, and nutritional, circulatory and nervous disorders bring on this hyperesthesia, especially at night, which is due to the efforts of the skin to eliminate microbial elements, and alimentary or human toxins. In these cases, high frequency, diathermy, violet rays and static baths furnish the best results.

Against pruritus of the lichen kind, Pautrier recommends profound irradiations. I think it is preferable to keep to a superficial roentgenisation, acting sufficiently on the great sympathetic in the dorso-lumbar region, and generally putting an end to neural disequilibrium.

Localised in the vulvar region, pruritus frequently attends metritis, salpingitis, pregnancy, lactation, the menopause, ovarian castration and diabetes. It sometimes breaks out under the form of acute and violent attacks, painfully reacting on the nervous system, and causing spasms, neuropathy and insomnia. Static and high-frequency effluves according to Doumer's method, Morton's currents and radiotherapy following Snow's principles (of New York) are advisable separately or together, according to the case.

In ano-vulvar pruritus, I employ a moderate dose of X-rays, effluves of high frequency and the static soufflé. With hemorrhoids or fissural erosion, anal diathermy is most efficacious. Besides this treatment, I always advise abstention from coffee, tea, alcohol, spices, salt food and tobacco and the removal of constipation. The static bath generally suffices to overcome the sensibility of an overexcitable nervous system, in neuro-arthritis; this simple treatment is excellent for hysterical or psychical pruritus, so hard to cure by pharmaceutical applications. It is precisely because our patients grumble about prescriptions which are nearly always inefficacious (when they are not aggravating) that we should have recourse to physical agents, always useful and harmless, and frequently decisive when they are applied with precision and sufficient circumspection.

#### 7.—Herpes and Zona

Herpes is an exanthema which is very often ephemeral. Unfortunately it relapses on every occasion with the greatest facility and discourages preventive treatment. Although herpes is considered to-day as of a virulent origin, I think it is more consistent to look upon it as a neuro-anarchic disturbance, following hepatic insufficiency. The painful discomfort accompanying herpes, and its habitual reappearance *in situ*, militates in favour of the tropho-neurotic theory. Whatever it may be, I have frequently succeeded in making rebellious herpes less sensitive, by means of high-frequency currents generally and locally applied for a few weeks, with the association of calomel taken internally.

As for zona, its prodromic and painful symptoms, its interminable neuritis, its localisation on the course of the nerves and the various trophic disorders which accompany it, all of these confirm the opinion that this variety of herpes is of spinal origin. Zona undoubtedly is the reflex of an irritation of nervous medullary origin acting upon the vertebral ganglia, nutritive centres of the cutaneous nerves (Brissaud). For my part, I have always noticed that a marked auto-intoxication presides during its evolution and complicates its symptoms. In

addition to calomel, given internally, galvano-faradisation, Roentgen rays, high frequency under the form of effluviations or the condensor bed, and thermo and phototherapy are the agents which I usually prescribe against zona. Although the continuous currents are sedative, they are no longer employed, which I consider a great mistake. The Roentgen irradiations show their great efficacy in rebellious and lingering forms; they prevent the stagnation of blood poor in phagocytes and cause a beneficent leucocytic proliferation. As to the painful sequences (reflections of a lesion of nerve endings), they must be treated with the ultraviolet rays, alternated with high frequency and the static bath.

### 8.—Acne and Pyodermites

Pyodermites are cutaneous affections due to pyogenic or suppurative microbes: staphylococci, streptococci, and other more or less virulent organisms. Benign in healthy subjects, they become serious and even grave in the weak, and cachectic. The pullulation of bacteria is usually felt in the pilo-sebaceous follicles, under the form of pustulous dermatitis, sycosis, furuncle, anthrax, furunculous acne, sty, etc.

The peripileous pustules which constitute acne vulgaris occur frequently in youth and at the change of life, when they are complicated by acne rosacea. Acne is due to a secretory retention of the sebaceous glands, often connected with the puberal phenomena in both sexes, and coinciding with dysmenorrhea, copric stasis and the cellular perversions of auto-toxemia.

Local and careful electrolysis (for the acneic teguments are of an essentially irritable nature) will get rid of the indurated parts. Frictions with a mixture of camphor, alcohol, glycerin and sulphur will cleanse the seborrheic comedones. The ultraviolet rays will remove the congestive element and powerfully modify the condition of the tissues, suppressing the oily secretions, as well as the sebaceous elements which are fertile in parasites and favourable to the culture of rebellious pyodermites. Sometimes it is necessary to intervene once or twice with the X-rays.

Rhinophyma is a variety of acne complicated by acne rosacea and telangiectasia, with exaggerated proliferation of the sebaceous glands and connective tissue. It is indicated by a real tumour, in which the total hypertrophy of the nose causes a repugnant deformation of the physiognomy. It is wholly a question of a sebaceous pachydermic polyadenoma whose patient exeresis and even decortication can be obtained with electropuncture combined with high-frequency scintillation and Roentgen rays.

In all these cases, physiotherapy is the more advantageous as recourse to therapeutics for the sebaceous glands frequently gives no results. The patients then become distressed about the tenacity of their facial eruptions. Evacuation followed by frictions with sulphuric ether will moderate the excessive activity of the glands, dry up the greasy running, disinfect the microbial secretions, and get rid of pruritus and parakeratosis, without weakening the epidermis. Here, we must count on the ultraviolet rays, which restore the tissue equilibrium by its reflex action on the sympathetic nerve; with it, there need be no fear of tegumentary atrophy or radiodermatitis, both which are very dangerous for the face.

Cheloidian acne of the neck will be treated by high frequency effluviations, alternated with salicylated or mercurial ionization in order to destroy and modify the diseased parts. Facial erythrosis will be treated by carbonic snow. In telangiectasis, the electro-puncture associated with high-frequency effluviations has victoriously replaced the old scarifications which substituted a white

check, visible against the red arborisations caused by the capillary varicosities of the cheeks: esthetics certainly gained nothing by it.

It goes without saying that it is indispensable in acne and seborrheides to treat at the same time coincident dysmenorrhea, intestinal stasis, enteritis, etc. It is known that all the physical agents aid in functional re-education. Our methods, conformable to nature, always give happy results. They prevent the development of exanthema, by harmonizing the nutrition and general circulation, besides stimulating in both sexes the genital system, which is frequently found in a state of dysfunction.

### 9.—Dry Dermatoses

Psoriasis is the prototype of the dry dermatosis. Resulting usually from slow and old intoxications, it is susceptible of being improved and cured by the physical agents, when the hepato-intestinal function is modified by calomel, castor oil and sulphate of soda. Parallel diathetic conditions are treated by injections of mercury, sulphur and arsenic.

The constitutional disposition underlying psoriasis is wholly amenable to the physiotherapeutic arsenal. By alternating sufficiently spaced séances of Roentgen rays, electrostatic baths, a feeble intensity diathermy, high-frequency effluviations, ultraviolet rays, and generalized d'arsonvalisation, each séance being preceded and followed by frictions of odourless oil of cade, I obtain surprising curative results. This combined method frequently furnishes radical cures, whereas the classic treatments scarcely result in a modest cleansing.

Ichthyosis and keratosis (which are rather malformations than pathological conditions) require, with greasy unctions, actinotherapy, baths of blue light, glycerinated hydro-electric baths, feeble continuous currents and salicylated ionisation. By these various means, enormous improvement is obtained thanks to a "keratolytic" action exempt from pain and even from itching.

### 10.—Vitiligo

A strange dyschromia, whose etiology is still obscure, but of essentially neuropathic origin, since it succeeds nervous disturbances (mental emotions, tabes, basedowism, psychopathies, alienation, heredosyphilis, rebellious neuralgia, ovarian castration, various traumatisms), vitiligo can be influenced by all the physiotherapeutic modalities. By improving the general neuropathy, and by galvanizing the posterior spinal ganglion, we shall modify a dystrophic disorder, connected in all probability with a rachidian radicle (it is even what gives to vitiligo its nosologic entity). The static soufflé and high-frequency effluvia may be added to medullary faradization as well as ionization (iodized or arsenical), while actinic violet rays, which create pigment, will locally remedy the exhaustion of the chromogenous dermic cells.

The hairs and nails affected by the vitiliginous leucodermia can also, by these various treatments, recover their normal coloration. The ultraviolet rays, well applied, have proved themselves quite capable (they are the only method) of restoring a pigmentary process, deficient or troubled, to its normal condition.

### 11.—Cheloids

Rarely spontaneous, these cicatricial productions (which sometimes follow a benign infection, or even a simple sinapism) have a most unpleasant aspect and cause a functional disturbance which necessitates the intervention of the physician. We cannot count here on any topical agent: caustics, injections, plasters, even electrolysis and cryotherapy as well as the best surgery



often more than fail, since they excite relapses and aggravations. Roentgenotherapy should be the method chosen: by its powerful succor, frenums, inclusions and adhesions disappear from the pliable, normalized and rejuvenated tissues.

Against livid spots, which are due to the distension of the skin and the disappearance of its elastic tissue, good results can be obtained by means of the ultraviolet rays, sparks, effluvia and the continuous current. The same treatment can be applied to vegetations and lichenifications. It is always fairly long when one wishes to avoid (which is advisable) violent inflammatory reactions.

### 12.—Angiomas

Vascular naevi and angiomas (birthmarks) should be treated, from infancy, by electrolysis and the ultraviolet rays. In case of resistance to these treatments, moderated roentgenotherapy should be employed.

Pilose naevi require the electropuncture: one should always operate very slowly on small parts of the pilosities at a time, avoiding the treatment of hairs too near together, so as not to leave cicatrices.

Pigmentary naevi are treated by electrolysis and ultraviolet rays, as well as congenital hyperchromias (wine marks) when the lesions are flat or smooth and the marks well rounded.

Prominent, warty, rugose, bristling papillomatous lesions, and angiomata which are highly developed on the surface, need bipolar electrolysis, although positive electrolysis suits very well the small erectile tumours clearly circumscribed.

In naevi-carcinoma, the violet rays and high frequency, with the X-rays, will be utilized in calculating as exactly as possible the cancerous radio-sensibility, supplemented by the morphologic examination of the tumour and above all by its karyokinetic indication.

### 13.—The Anal Fissure

The exasperating attacks of this odious little affection come on principally after stools. They react, sometimes profoundly, on the nervous system and are accompanied by neuralgic spasm of the sphincter. They are cured by high-frequency applications, following Doumer's classic method. The currents of d'Arsonval are also decongestive, analgesic and non-irritative, even in case of a subjacent hemorrhoidal or eczematous condition. In general, about ten séances are necessary for the cure. But each séance being followed by a feeling of euphoric well being as a consequence of the realized sphincter lull, the patient is always encouraged to continue this physical therapy, the only one capable of exercising an anti-spasmodic action on the anal contraction and at the same time cicatrizing the lesion.

This method (more preferable to surgery as regards results) is in reality a diathermotherapeutic process directed against the pathogenic elements of the fissure: a treatment which combats the cause of the pain before all. For is not the fissural pain an interstitial neuritic condition grafted on a small ulceration, whose discovery is often difficult?

### 14.—Lupus and Cutaneous Tuberculosis

In a communication which marked an era, at the International Congress of Medical Electrology and Radiology of Paris in 1900 (Treatment of Tuberculosis and Certain Malignant Tumours by High-Frequency Effluves and Sparks), a communication completed in 1903, at our Academy of Medicine, I was the first to prove the reality of the curative action of these electrotherapeutic processes as well as of the Roentgen rays, in the treatment of cancer and tuberculous ulcers. I was

the first to remark the esthetic results, beyond comparison, realized by the physical methods. Everyone knows to-day that the cicatricial cures obtained in cutaneous tuberculosis, by Finsen's actinotherapeutic method, demand a long and costly technic. Lupus should at first be treated by phototherapy, high-frequency scintillations, X-rays, the electrolytic needle, and electro-coagulation. Thus the nodules are disinfiltrated and the neoplasm destroyed by portions. But radiotherapy combined with high-frequency effluves is often necessary. Good dressings intercalated between the séances will activate the cicatrization.

High-frequency sparks and effluves, hot air, cryotherapy and phototherapy, applied in a methodical and persevering manner, to the soft and indolent tissues, procure curative reactions, controllable from day to day by the practitioner. It is especially the effluves which give the best cicatrices, smooth, supple, esthetic, exempt from cheloids, fibrous indurations and also mutilating lesions, because the healthy tissues are always respected and no secondary dermatitis is to be feared with that treatment.

Well applied, the physical agents will achieve the curative evolution in one praiseworthy process: by them we realize at the same time, exeresis and antiseptis, the effluves setting free in the nascent state, the bactericide ozone; we will respect the healthy tissues; we will finally assure a local analgesia, in lupus "exedens" as well as in vegetative, verrucous, or nummular forms of this deplorable dermatosis.

For the erythematous form of lupus, which is very often refractory, we advise the same method. Electrolysis often fails. The X-rays, which are completely painless, give happy, esthetic results. Phototherapy is successful in treating the face, where a bony, resistant surface permits us to assure ourselves of exact results in the course of the sittings. Its cytophilic and immunizing power seemed to me unquestionable on many occasions: however, it necessitates much time, technical experience and also clinical judgment.

### 15.—Epithelioma of the Skin

As prophylaxis, it is important to know how to treat the cutaneous alterations which favor, particularly in old people, the epitheliomatous eruptions. Old, callous ulcers, seborrheic, flat verrucae, molluscum, radiolucitis, etc., can and should be radically eradicated, because partial or insufficient destruction seems rather to excite the malign degeneration. For that purpose, as well as for destroying in Malpighi's membrane and in the corneate stratum of the epidermis, confined neoplasms, radiotherapy will be employed, combined with the high-frequency spark or electro-coagulation. I personally brought to the knowledge of my colleagues, about thirty years ago, the advantages of that treatment, which is really an elective one, which means that it is only the neoplastic cells which are destroyed when the normal tissues are stimulated.

The X rays are mostly successful against superficial epitheliomas, ulcus rodens and cancrroid. Ordinarily a few applications made at different intervals are sufficient to obtain exeresis, with an esthetic cicatrix and restitution of the coefficient of tegumentary resistance, indispensable for avoiding relapses. Immediately before using radiotherapy, I recommend effluves to be applied in all the area, in order to increase still more future security.

Our method<sup>1</sup> has yielded numerous successes, not only in basocellular epitheliomas, but also in Bowen's disease, Paget's disease, molluscum and other precancerous lesions undergoing malignant proliferation, and in meta-

morphosis in epithelioma, sometimes masked by cellular parenchymatous edema, which the physical agents get rid of in a marvellous way.

### 15.—Diseases of the Scalp

The static souffle and the high-frequency effluves have given regrowths in numerous cases of alopecias, particularly of areata and seborrheic alopecia, uselessly treated by other methods. At the present time, it is above all the ultraviolet rays (recommended at first in America), which has taken the place of honor for the transformation of falling hair, on the baldest heads, into adult and firmly implanted hairs. However, "artificial sunlight" must be prolonged for a considerable time (local and general), if a lasting and a complete cure is desired. Static ozonization and the Roentgen rays applied at different intervals will usefully aid these treatments.

Precocious, or consecutive to juvenile pyrexias, baldness is nearly always of seborrheic origin. Bacillary infection is generally present, sebum being a marvellous medium of culture for bacteria. Therefore it is also necessary here to prevent firstly, by general hepatobiliary medication (calomel, alkalies, etc.), which acts on the metabolism of fats, the exaggerated production of sebaceous matter on the scalp. As a local treatment, we advise the classic sulphurated lotions and above all ultraviolet irradiation, a method of "removing grease" which is clean, penetrating and above all inoffensive, and which it seems should replace to-day, radiotherapy, at first recommended.

We must not forget the part played by the nervous system, by way of genesis and seborrheic exacerbation; overwork and too much pleasure, grief and insufficient sleep frequently figure in the etiology of this common form of alopecia. Let us try, consequently, to re-establish normality by the aid of all the nervine physical agents. To finish with seborrhea, we may mention that that of the glabrous parts is likewise amenable to actinotherapy, but it must be much milder on the face than on the scalp.

The endocrine-sympathetic nervous system is to-day recognized as having an important part in the production of pelade, universally dispossessed of its former parasitic character. Pelade is but a trophoneurosis, frequently accompanied by disorders of the circulatory system (vasomotor anomalies, spasm of the small arteries, modifications of the oscillometric index, glossy-skin, perforating disease, shivers, exaggerated reflexes, intermittent claudication, general hypotonia), implying, without any doubt, the principal participation of the great sympathetic system in baldness.

All the alopecias by atrophy of the pilous bulb require, firstly, the cure of the nervous disequilibrium, which creates the peladic predisposition: I apply in those cases static and effluves of high-frequency douches.

All the physical agents capable of improving cellular gymnastics can prevent baldness. Stimulating and germicidal violet rays (this latter property is of a nature to reassure those who fear a possible bacterial contagion) are applied with success to all alopecias of the peladic type. When pelade coincides with deficient fixation of the wisdom tooth, Basedow's disease, disorders of the menopause, and congenital or acquired syphilis, it goes without saying that we must always do our best to treat the cause.

<sup>1</sup> I may say "my method," since I was the first (Congress of Paris 1900, Academy 1903), to establish clearly the curative elective power of high-frequency sparks and effluves, and radiotherapy on the neoplastic cell. Since that far distant time, I have published the happy results thus obtained against epithelioma and other malignant neoplasms.

### 17.—Conclusions

1. The physical agents combat dermatosis, directly: by their action on the nervous terminals and the nutrition of the dermoepidermic cells; through glandular cleansing, and the activation of the exchanges; indirectly, by the general vitalization and detoxication, which modify the morbid predisposition.

2. The best curative results are obtained by grouping, associating and combining the different physiotherapeutic measures, without neglecting the diet and the etiologic treatment of the various organic vices and especially detoxication by calomel, sulfate of soda and castor oil.

3. The physical agents which render the greatest service are: the ultraviolet and X rays, high-frequency (effluves, sparks, diathermy) and static applications.

4. The pruritus without lesion, frequent in nervous, hepatic subjects and old men, and ano-vulvar pruritus, are of a fairly rebellious and annoying nature, such as to necessitate the successive or associated intervention of all the agents mentioned above. Zona, which is a type of nervous dermatosis, depends essentially for its cure on physiotherapy.

5. It also renders great service in the treatment of pyodermites, furunculosis, acne, rhynophyma, and telangiectasias. Dry dermatosis and especially psoriasis, so refractory to all treatments, vitiligo, trophoneurotic dyschromia, and cheloids (curable by roentgen-therapy) show us the therapeutic power of physico-dermo-therapy.

6. The treatment of various naevi and angiomas is the triumph of our methods, when we know how to combine the action of electrolysis with that of the diverse irradiations.

7. The anal fissure also finds its sovereign remedy in Doumer's classic procedure, anal diathermy.

8. The cure of lupus and cutaneous tuberculosis is obtained above all by radiotherapy and high frequency sparks and effluves, electrolysis and the violet rays.

I pointed out, over a quarter of a century ago, the therapeutic value of high frequency and X rays against localized tuberculosis and cancer. It is the same for the treatment of epithelioma of the skin, which I showed in 1900 as benefiting greatly from the cytolytic power I attributed to radiotherapy and high frequency scintillations.

9. Physiotherapy (and chiefly the various effluves and the ultraviolet rays) is also applied with success to the treatment of alopecia areata and seborrheic alopecias.

### Effect of Morphine on Function of Normal and Pathologic Kidney

The work reported on by Ira R. Sisk and William S. Beyer, Madison, Wis. (*Journal A. M. A.*, June 30, 1928), was undertaken primarily for the purpose of determining the safety of administering morphine sulphate in quantities sufficient to insure comfort to patients who had been subject to operations on organs of the genito-urinary tract, and who had some impairment of the kidney function. The results were sufficiently constant to justify the following conclusions: 1. Morphine sulphate, given in the usual therapeutic dose and repeated every four to six hours until the patient develops toxic symptoms does not impair the function of the normal kidney. 2. Urologic surgical patients may be given morphine sulphate in the usual therapeutic doses without fear of impairment of renal function.

### Secretary of Labor Favors Examination of Passengers While Vessels Are at Sea

The Secretary of Labor, James J. Davis, stated on September 5, following his return from Europe where he went to inspect the immigration service of the various countries, that he will seek to work out a plan whereby an immigration inspector, a customs officer and a United States Public Health Service physician would hereafter be placed on the large ocean liners to expedite the examination of the entire passenger list.



# Modern Biochemistry in the Service of Medicine, I. Minerals

F. E. CHIDESTER, A.M., Ph.D.

WEST VIRGINIA UNIVERSITY

Morgantown, W. Va.

With the remarkable developments in the new field of "vitamin" study, and the tremendous advance recently made in our knowledge of the functions of the endocrine glands, medical men are perhaps getting away from their earlier methods of utilizing *drugs* to correct disturbed conditions of metabolism.

One should be able to keep healthy by using the sunshine, fresh air, pure water and adequate foods that nature intended. But we live under conditions where it is impossible to secure pure water with the right chemical constituents; many people are unable to buy citrus fruits and green vegetables the year round; and as soon as experts in nutrition recommend the use of meats (such as liver) to anemic and weakened individuals, the price is sent soaring.

It would seem wise to consider the addition of inexpensive mineral substitutes to our foods in much the same way that we now add condiments. The addition of iodine to salt (iodized salt) in order to prevent goitre, is one of the best known examples. Perhaps we may yet find it practicable in the home to add to milk, water and food, certain chemicals essential to health.

## Chemical Characteristics of Protoplasm

Protoplasm consists of proteins, carbohydrates, fats, various salts, water and gases.

**Proteins.**—Proteins are compounds with high molecular weights, which contain carbon, oxygen, hydrogen, and nitrogen. Usually they contain sulphur, and sometimes phosphorus. They are apparently a condensation of the molecules of numerous amino-acids and by *hydrolysis* they yield amino-acids in different quantities and of different characteristics.

Proteins differ in their *color reactions* and are readily classified by such reactions. Proteins also differ in *precipitation reactions*. Some are precipitated by the mineral acids such as nitric, hydrochloric and sulphuric, others by salts of the heavy metals, particularly mercuric salts. The *alkaloidal reagents* which precipitate the vegetable *alkaloids* are *precipitants* for proteins. Eggs, rich in protein are used as an antidote for copper, lead or *mercury* poison, since they render the metallic compounds insoluble so that they may be removed by the stomach-pump or laxatives.

**Colloids.**—Proteins are *colloids*. The term "colloid" which comes from the Greek word for "glue," referred at first to substances like g'ues and gums, but now is used to indicate finely divided matter suspended in any medium. Colloids may include *liquid* dispersed in a *gas* or another *liquid* or even a *solid*; or may refer to solids similarly dispersed. Blood, lymph, bile and the various digestive secretions are common examples of colloidal solutions.

Proteins, as colloids, do not readily *diffuse* through *membranes* nor go into solution. They readily absorb substances however, and in the cell, they synthesize and oxidize them. Protein individuality is such that the blood of one species cannot be *transfused* successfully into the circulation of another species without fatal results. Foreign proteins are apparently incompatible. It is interesting to note however, that human blood may be successfully administered to certain of the anthropoid

apes. Clumping together (agglutination) of blood corpuscles occurs when incompatible blood is transfused.

**Precipitin Reaction.**—An interesting test for the detection of human blood in murder cases is dependent on the solubility of blood protein. It is said that soluble protein will give the test after a period of 50 years. The serum of an animal (a rabbit is ordinarily used) injected with the blood or blood serum of another animal, will when added to a homologous serum, precipitate the albumin in the form of a light flocculent precipitate.

**Carbohydrates.**—Carbohydrates consist of *carbon*, *hydrogen* and *oxygen*, and occur in both the crystalline and colloidal state. Carbohydrates can be converted into fats. In plants the starches are commonly distributed, but *glycogen* is the only example of animal starch. Glycogen occurs in all the growing cells of the animal body, but is found chiefly in the liver and muscles.

There are three chief groups of carbohydrates. The monosaccharids with one sugar group include dextrose or grape sugar. The disaccharids include cane sugar, milk sugar and maltose. Several monosaccharid molecules become united into a polysaccharid. Corn and potato starch and wheat flour are common examples of polysaccharids.

The monosaccharid dextrose ( $C_6H_{12}O_6$ ) is formed in the leaf of a green plant from carbon dioxide and water.

Plants function in the manufacture of carbohydrates from carbon dioxide and water. Recently Professor E. C. C. Baly of Liverpool University, has produced sugar synthetically in his laboratory. He utilized ultra violet rays on quartz vessels of water in which carbon dioxide was dissolved. With small quantities of either *iron* or *aluminum* compounds as catalysts, he obtained sugar.

In nature, sugar is made through the action of the sun in chlorophyll containing plant cells and from this sugar other foods are formed by the addition of different chemical elements. Sugar then, is the source of all food, and the process just mentioned, "photosynthesis" is the "most important chemical reaction in nature."

It is interesting to note that "bios", a substance promoting growth in yeast as "vitamins" do in animals, has been recently analyzed and shown to consist of two substances. One of these, "inosite" has the same proportions of carbon, hydrogen and oxygen as common *glucose*, but with much more complex chemical arrangement.

## Fats

Fats contain carbon, hydrogen and oxygen in different proportions, containing much *less oxygen* in proportion to the carbon than in the carbohydrates. Fats can readily be converted into carbohydrates. They are found in seeds and nuts and in animals occur in the connective tissue called *adipose*.

Fats of the body are derived not only from the *fatty* substances consumed, but are also formed from *carbohydrates* and *proteins*. Fats contain twice as much heat as carbohydrates and are essential in maintaining the proper body temperature.

**Chemical Constituents.**—Carbon compounds are the

primary materials of protoplasm. Carbon unites with oxygen to form carbon dioxide and water and to liberate energy.

*Hydrogen* is taken into the bodies of plants and animals in combination with oxygen as *water* and is thus excreted.

*Oxygen* is found in the free state and unites with various compounds of protoplasm, the process of oxidation releasing energy.

*Nitrogen* is essential to protoplasm. It forms 79% of the atmosphere. Taken into plant bodies in the form of nitrates, the plants utilize it in the manufacture of proteins. Ammonia, a nitrogen compound, formed in the katabolism of plants and animals is changed by bacteria into nitrates which are then absorbed by plants.

**Mineral Salts.**—But proteins, carbohydrates and fats are not the chief foods of man. The most important foods are *mineral salts*, water and air.

It has been demonstrated that if mineral salts are withheld from the body, death ensues much more quickly than from the withholding of proteins, carbohydrates and fats. The salts of the body in *solution* aid in providing the proper *medium* for living tissues while those in *combination* with organic substances furnish the proper elements for the *formation of tissues*. The mineral salts are *necessary* to maintain normal physiological equilibrium and purposeful activity in the organism.

*Sulphur*, usually found in the soil as calcium sulphate, is absorbed by plants and used in the manufacture of some amino acids. Sulphuric acid compounds are built up into protoplasm and given off during putrefaction of dead organisms in the form of the gas hydrogen-sulphide. The action of sulphur bacteria restores the sulphur to the soil in the form of sulphates.

*Phosphorus* enters plant cells in the form of phosphates. The nuclein and lecithin so necessary to living cells are phosphorus compounds. On the decay of cells, phosphorus reappears in the form of phosphoric acid and unites with lime to form phosphate. Calcium *phosphate* is an important constituent in bones and other hard tissues.

*Calcium* is the most important mineral and is found in the largest amounts in animals. Calcium salts are necessary in the coagulation of blood and milk and the formation of bone. Apparently the normal beating of the heart depends on the relationship of calcium to sodium and potassium salts.

If the calcium phosphate requisite is not available for deposition in the cartilaginous matrix prepared for it the bones are soft. The condition known as *rickets*, seems to be due to a failure to maintain the proper *ratio* between the calcium and phosphates of the food for cases are known where rickets has occurred even when calcium was abundant. *Cod liver oil* is a cure for rickets.

Calcium aids in keeping up that alkalinity of the blood so necessary for the preservation of the teeth and the bones.

Calcium excretion occurs through both the urinary and digestive tracts. It is *increased* by the ingestion of excessive amounts of *magnesium*.

It is essential to life that a proper balance be maintained between calcium, sodium and potassium ions.

*Silicon* and *fluorine* are apparently required in small quantities for the proper formation and growth of *bones* and *teeth*. They are secured from milk and fibrous vegetables.

*Sodium* in the form of common salt (NaCl) seems to be essential in the diet of vegetarians. Apparently sodium is not required for plant life and growth. Cer-

tain nomadic tribes living almost entirely on meat do not seem to require salt. Steffanson reports that the carnivorous Eskimos of Greenland actually disliked the taste of salted foods. Thomas has recently (1927) pointed out that while the Greenland Eskimo, living on raw meat, is apparently supplied with vitamins and is not afflicted with scurvy or rickets, the Labrador Eskimo who lives on cooked meat and dried and canned vegetables, is subject to both maladies.

The West African negroes living almost entirely upon vegetables, have an insatiable craving for salt. They are willing to barter even their wives and children to secure the commodity.

*Herbivorous* animals are well known for their long migrations to "salt licks." The *carnivorous* animals do not take salt.

St. John has recently (1928) shown that in experimental rats amounts of sodium below 0.3 per cent were inadequate for growth while additional sodium increased the growth and general well being.

*Chlorine* is important to the animal in maintaining the secretion of gastric juice and in keeping the optimum osmotic pressure. The acid-secreting cells of the stomach select for their use, the NaCl of the blood.

*Potassium.*

*Vegetable* foods contain a preponderance of *potassium* which increases the amount in the blood far beyond its ordinary concentration after *mixed* diets. The increased potassium reacts chiefly with the sodium salts of the blood, causing a replacement of sodium chloride by potassium chloride and induces increased elimination of sodium in the urine, thus causing the so called "salt hunger." Potassium salts are indispensable in the synthetic processes of organic combination. They aid in the formation of *glycogen* from *glucose*, of *fats* from *glycogen* and of *proteins* from *peptones*. The *liver*, the source of glycogen, contains *twice* as much *potassium* as sodium. Potassium is found in red blood corpuscles and also in the brain and is apparently necessary to the normal function of organic life.

*Magnesium* is found in greater quantity than calcium in the muscular tissues and the nervous system. The salts of magnesium aid in the formation of the albumin of the blood, reduce foreign matter and waste and maintain the osmotic pressure of the blood. Magnesium requires the presence of calcium salts for proper function and is in fact, injurious in the absence of calcium.

Leroy has recently (1927) demonstrated that magnesium is necessary for the growth and maintenance of white mice.

*Copper*, found in the earth in metallic form, occurs in minute quantities in most vegetable and animal tissues. Its significance has been greatly emphasized by certain experiments performed by McHargue (1925, 1926) and more recently by the group of chemists at the University of Wisconsin, headed by Dr. E. B. Hart. The latter, found (1927) that .01 mg. of copper as copper sulphate given daily to rats in addition to .5 mg. of iron, was effective in curing their anemia in the course of 2 or 3 weeks. The iron given alone was entirely without effect.

Copper may act as a *catalyzer* in the production of hemoglobin.

Whipple and associates at the University of Rochester (1928) have recently reported their findings in the case of anemia produced in dogs by bleeding. Iron proved more potent than either *copper* or *zinc* in these cases, but Whipple suggests that the results of the Wisconsin investigators, were different because their animals had a dietary anemia.

Recent studies at West Virginia University (in press)



indicate that in vitamin A deficiency, small quantities of copper have a markedly deleterious influence while minute quantities of iron have a beneficial effect.

**Iodine.**—It has long been known that iodine is extremely important in connection with the normal functioning of the thyroid gland and that the latter is a powerful regulator of metabolism. It increases the rate of oxidation. Minute quantities of iodine are necessary, the human thyroid containing about 1/15 of a grain of iodine, but lack of the essential amount may cause a disease known as *cretinism* in which bodily and mental development are both subnormal.

Excessive thyroid secretion has been experimentally shown to induce the rapid development of small individuals but it is not generally known that quantities of iodine so minute that *cretinism* and some forms of goitre result in some members of a community, will result in others in a stimulation of the appetite and actually induce bone growth and the deposition of apparently healthy fat.

Iodine is an important constituent of vegetable foods and is found in large quantities in the plants and the animals of the ocean.

In all probability it is in part responsible for the preservation of the carnivorous Eskimos of Greenland.

One feature in connection with discussions of the remarkable freedom from illness due to vitamin deficiency in these meat-eaters of the far North has been disregarded.

Whales, seals, walrus and bears of the far North secure their food almost entirely from the water, devouring the fish which in turn depend upon minute organisms living on a diet rich in minerals.

The raw liver, glands and oil of the mammals mentioned and of the codfish, which also forms a considerable part of the diet of the Eskimos, are rich in iodine, iron, manganese and minute quantities of other minerals such as *zinc* and *copper*, which undoubtedly play an important part in the animal economy.

Thyroid extract has proven beneficial in cataract and other eye diseases involving keratinization. (Kerr, 1926).

Physicians use calcium iodate and other iodine compounds with excellent success in the treatment of *colds*. Several investigators have noted that snuffles in rabbits can be cured by the use of *cod liver oil*. It is the belief of the writer that the efficacy of such treatment is not due to the mysterious qualities of some obscure "vitamin" but is really an iodine effect.

It has also been shown by the West Virginia group (papers in press) that iodine when added to iron will relieve xerophthalmia and in part replace the so-called "vitamin A."

Wollenberg (1923) has shown that whereas iron and arsenic raised the blood count in erythropoiesis, but did not bring about subjective improvement, he was able by the use of desiccated thyroid, to completely restore to health a case of pernicious anemia in which a man had suffered for 3½ years until his blood count had fallen to 900,000. The cure was effected by 3 tablets of 1½ grains each of thyroid given daily.

**Arsenic** found in the earth as a sulphide, occurs in minute amounts in animals and vegetables. Gautier and more recently Bertrand have emphasized the importance of arsenic as a constituent of the living cell. The yolk of the hen's egg usually contains twice as much arsenic as the white. Arsenic enters into the composition of the epidermis and its appendages, the thyroid and the mammary glands, and the central nervous system. Arsenic resembles phosphorus in its chemical affinities.

Arsenic given in small doses, increases the appetite and improves the general condition in pernicious anemia

but the improvement is only a temporary one.

Experiments in the West Virginia University laboratories (papers in press) show that arsenic given in combination with iron of a proper strength to increase growth in rats, induced a rapid decline and resulted in death.

**Iron** is an important constituent of both plants and animals. It is necessary for the formation of chlorophyll in plants. Without the iron in blood, oxygen could not be carried to the tissues.

Iron is requisite to oxidative processes and is contained in hemoglobin. Lack of iron leads to insufficient nutrition, anemia and death. Although not a constituent of the chlorophyll molecule, iron acts as a catalyzer in the production of chlorophyll.

Peterson and Elvehjem have recently (1928) examined foods for iron. They find that green leafy vegetables, dried legumes and the dark meat of poultry and salt water fish, are rich in iron, while vegetables such as cabbage and celery with little chlorophyll, and the *light colored meats* and *fish* were *low* in iron content.

Iron has been used most effectively in the treatment of anemia, but just now the fashion is to utilize the iron of calves liver instead of adding minerals directly to the diet.

It has been shown that iron may be utilized either in organic or in inorganic form. Cushny states that many chlorotics show little improvement when given *food* containing iron, but recover when furnished *inorganic* iron.

Hart, Steenbock, Elvehjem and Waddell (1925) found that inorganic iron ( $\text{Fe}_2\text{O}_3$ ) would not correct nutritional anemia, but in the presence of fresh cabbage or in alcoholic extracts of desiccated cabbage or yellow corn meal, the anemia was cured. These extracts were free from iron. Chlorophyll, also free from iron, would in the presence of the added inorganic iron also correct this anemia.

Whipple and Robscheit-Robbins had previously (1920) shown that it is possible to modify hemoglobin regeneration by regulating the diet. Dogs were used as experimental animals.

The same authors again using dogs as experimental animals (1925) devised a series of experiments to test the amount of hemoglobin regeneration which could be brought about by various foods and drugs. Calculated amounts of blood were withdrawn from the animals to keep the hemoglobin level between 40 and 50% of the normal over a period of several months. Since the amount of hemoglobin in the blood of the animals was kept practically constant by the frequent bleedings, the amount of regeneration could be measured by determining the amount of hemoglobin which was withdrawn from the experimental animals.

They found that the iron treatment, Blaud's Pills (Ferrous carbonate) had very little influence on simple or short anemia. However, *iron* treatment was fairly successful in long continued anemia due to bleeding.

Germanium dioxide produced almost no effect and arsenic was of only slight value.

The most striking feature of the experiment was the fact that a diet rich in *liver* caused the most rapid *hemoglobin regeneration* of any of the foods or drugs tested. They did not determine why liver was so beneficial but several theories have been advanced more recently.

Koessler, Maurer and Louchlin produced anemic conditions (1926) similar to human pernicious anemia in *rats* fed a diet deficient in vitamin A. When vitamin A was added to the diet in the form of butter fat or cod liver oil the hemoglobin regeneration was very

rapid. The authors pointed out that blood regeneration cannot take place in the absence of vitamin A.

In the treatment of clinical cases they found that the addition of an abundance of vitamin A as well as of the other vitamins assisted greatly in the treatment of pernicious anemia.

Minot and Murphy (1926), in 45 clinical cases, used a diet containing 200 grams or more of liver daily. Excellent results were obtained.

Hart, Elvehjem, Waddell and Herrin (1927) showed that the ash of lettuce or cabbage corrects nutritional anemia in rabbits. The ash of corn is not as potent. The authors were thus led to conclude that the deficiency in milk diet is *inorganic* rather than organic.

They then tried ferrous sulphate and found it effective in correcting the milk diet but that its effectiveness decreased as a more nearly pure ferrous sulphate was used.

Murphy, Monroe and Fitz (1927) duplicated Minot and Murphy's results with a diet especially rich in liver.

Cohn, Minot and Fulton found (1927) that the alcohol-precipitable extractives of liver contain the active principles in blood regeneration. This is free from lecithin, ordinary lipoids and all but a trace of protein sulphur and iron.

Simmonds, Becker and McCollum (1927) suggested that the special value of liver in the diet recommended by Minot and Murphy, lies in its content of Vitamin E and of iron.

Mitchell and Baughan (1927) stated that ferric acetate and ferric albuminate are especially good in causing hemoglobin regeneration in cases of true nutritional anemia in rats. Peptonized ferric oxide, saccharated ferric oxide, saccharated ferrous carbonate, ferrous iodide give fair results, while ferrous carbonate, ferrous lactate, ferric oxide, ferrum reductum, are poor. Ferric cacodylate administered orally cause much severe diarrhoea and loss of weight so that the experiment had to be discontinued. Ferrous iodide stimulated prompt and rapid rises in hemoglobin in several cases, but failed to maintain the level. Increase in the quantity stimulated a temporary response only.

Attention is called by Robschey-Robbins and Whipple (1927) to the present confusion in the field of experimental anemia. This is attributed chiefly to differences in the experimental conditions in the various studies reported, particularly the use of different species of animals and different methods of producing anemia. Observations of the authors are cited to show that small amounts of iron salts added to the diet may or may not cause an increase in blood hemoglobin over that of the control period, depending upon the actual shortage of iron at the time of feeding. It is also shown that the amount of hemoglobin regenerated by a large dosage of iron salts is increased to a marked extent by additional feeding of kidney or spleen. This is thought to indicate that the favorable action of kidney or spleen is not attributable solely to its iron content.

Thus we find that some workers hold that the beneficial influence of liver is due to the iron content since the liver aids in the control of pigment metabolism and probably makes possible a more rapid regeneration of hemoglobin. Still others regard the high vitamin-A content of the liver as the chief beneficial factor. At any rate, we now know that blood regeneration can be markedly accelerated by a diet rich in liver, by soluble iron salts, or by abundance of vitamin A.

**Manganese.**—Lindow and Peterson have presented data (1927) on the *manganese* content of 84 materials, covering the principal classes of human foods. They

found traces only in grapes and the pulp and juice of oranges, but that Northern grown lettuce contains 216 mgm. per kgm. of dry weight. Pineapples, beet (tops) and blue berries contained relatively large amounts (122-134 mgm.).

Hog liver contains 12.2 mgm. per kilogram of dry material, while beef spleen and round steak contain none. Northern grown lettuce contains 216 mgm. per kilogram of dry weight.

The liver of young animals is the storehouse for the body's reserve of *manganese* and other mineral elements apparently necessary for the maintenance of physiological equilibrium.

The human body contains only  $\frac{1}{2}$  oz. of manganese, but a deficiency results in disease.

**Other Minerals.**—*Bromine, boron, zinc and aluminum* are present in small quantities in plants and are important to the life and growth of the plant. Their exact significance as food for the living animal is not fully understood. The importance of *zinc* and *boron*, have recently been emphasized by Miss Sommer and Professor Lipman, of the University of California, who found that one part of each in two million parts of a solution surrounding the roots of plants, induced healthy flourishing growth, while controls deprived of either one of these minerals but furnished a balanced ration of other mineral nutrients, failed to develop beyond the seedling stage.

**General Considerations.**—In the foregoing discussion we have introduced a few of the more recent contributions to our knowledge of minerals, and pointed out their applications to modern medicine.

Albu and Neuberg have summarized effects of minerals in the organism:

1. They are cell and tissue builders and they take part to a different extent in growth and formation of all tissues.
2. They bring about the osmotic tension in cells and tissues, blood and humors, and are, therefore, indirectly transmitters of energy.
3. They may regulate the reaction of the blood and of the humors as well as the action of many ferment processes, especially in the digestive canal.
4. They act as catalyzers for a great number of chemical processes in the organism. They act, for example, as oxygen transmitters in connection with oxidation. They bring about the changes in the proteids in the cell protoplasm, which are inseparably connected with the functions of the latter.
5. They are the agents for the poison-producing and poison removing processes that are taking place continually in the living protoplasm, maintaining a balance on account of their partial antagonism.
6. They probably act as agents for a great part of the so-called intermediary assimilation processes, apparently more especially in the glandular organs. They augment and regulate everywhere the decomposition and assimilation of the organic substances.

**Ionic Interaction of the salts.**—Arrhenius pointed out that the salts in aqueous solutions split up into *ions* which are charged with *positive* and *negative* electricity. Finkelstein confirmed the *different* action of the various *salts* as a specific *ion action*. Loeb says "the chief role of all food is not to be digested and burned in the muscles and organs, but to supply electrical ions. The heat developed is a by-product. The chief action is the production of electricity." The body is in a sense a dynamo, the nerve cells acting as storage batteries and the nerve fibers as the wires, the electro-motive forces in the organism depending on this splitting up of the



salts in solution and upon the passage of the freed ions through the body fluids.

The ions of the salts interact maintaining a constant osmotic pressure and regulating the most important functions of life, which depend on this constant osmotic pressure.

### The Importance of Electrolytes for the Normal Action of Hormones

Earlier investigations and discoveries have suggested to Kylin (1926) that the concentration of potassium and calcium in the intermediary fluid of the tissue might play a decisive part in adrenalin reactions. It was shown that an individual who reacted to a certain adrenalin reaction with a vagotonous adrenalin blood-pressure reaction after an intravenous injection of 1 gm.  $\text{CaCl}_2$  reacted with a sympathicotonus adrenalin curve. An intravenous potassium-calcium injection, on the other hand, changed a sympathicotonus adrenalin curve into a vagotonous one.

To determine whether other hormones suffered a similar influence the action of insulin and of pituitrin were also tested.

Calcium weakened the effect of insulin in reducing the sugar in the blood, while potassium strengthened that effect. The previous discovery of Zondek and Ugko that insulin, like adrenalin both reduces the sugar in the blood and also increases the sugar in the blood if one uses very small doses, suggested that calcium, weakening the reduction of sugar in the blood was the same as strengthening the second "phase" of insulin.

Pituitrin effects are strengthened by potassium while calcium causes a weakening of the effect. Myrman obtained results indicating that calcium and potassium ions affected the action of pituitrin much more than that of either insulin or adrenalin.

Zondek has denied the specificity of hormones and indicated that they were according to the momentary constellation of the electrolytes.

Kylin has proven that the electrolytic constellation has the power to change, to shift and invert the effect of hormones.

### Minerals, Vitamines and Hormones

There must be quite definite correlation between the endocrine glands and the food stuffs, as affecting growth.

We must find the most significant of the minerals contained in foods rich in the so-called "vitamins" and experiment with those substances that apparently activate the internal secretions.

Our thesis is that an adequate diet must contain proteins, carbohydrates and fats with sufficient calories, but that extremely important supplemental influences are those due to the action of minute quantities of potent chemicals whose physico-chemical behavior activates, and in many cases supplements as well, the endocrine system of the body.

In another paper it is projected to show the possible relationship of the minerals contained in the "vitamins" to the proper functioning of the endosecretory glands.

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### New Regulations for Liquor Prescriptions

Probably with the idea of obtaining more effective control over the prescribing and dispensing of medicinal liquor, the Commissioner of Prohibition has promulgated new regulations effective August 16. Under these regulations the physician must make four copies of each prescription, two originals and two carbons, instead of two copies as he was required to do under the old regulations. Both original copies are given to the patient. Both carbon copies are retained by the prescribing physician. The patient gives both original copies to the pharmacist. The pharmacist cancels both copies of each prescription when he fills it, and some time each month sends to the local prohibition administrator one copy of each prescription filled during the preceding month. The physician, within the first ten days of each calendar month, must send to the local prohibition administrator one of the retained carbon copies of each prescription issued by him the preceding month. Thus each prohibition administrator, if a prescription has been issued and filled within his district, will have in his office an original and a carbon copy of it, in from one day to two months after its issue.

The new regulations relieve pharmacists of much burdensome record keeping, by making the copies of the prescriptions that they are required to keep and the copies that they are required to file monthly with prohibition administrators the only required record of the transactions. The regulations add materially, however, to the labor of physicians, requiring that they write four prescriptions instead of two, that they make monthly reports to the Commissioner of Internal Revenue, instead of reporting only when their books of prescription blanks have been exhausted or when specially directed to report by the commissioner, and that they keep copies of all prescriptions issued, in addition to keeping an elaborate book record of all such prescriptions. The regulations do assume to relieve the physician of the statutory duty of returning to the Commissioner of Prohibition the book of stubs of used prescriptions. This concession, however, is of no importance, for the formula that the commissioner will ultimately lay down, with which physicians will have to comply in order to obtain new prescription blanks, will presumably be no less elaborate than the formula now prescribed.

Presuming that physicians will make their monthly returns to prohibition administrators by registered mail with requests for return receipts, as they must do for their own protection, the annual outlay by the medical profession for postage and registry fees alone under the new regulations will amount to approximately \$180,000 a year. If to this is added the cost of stationery and of labor, it seems likely that the new regulations will increase the expenses of the medical profession by as much as a quarter of a million dollars annually. In the ordinary course of business it may be expected that this item of cost will enter into the general cost of medical practice and be passed along to the sick.—*Jour. A. M. A.*, Aug. 25, 1928.

### Ephedrine in Leprosy

E. Muir (*Indian Medical Gazette*, April 28, p. 198), in a preliminary note on the use of ephedrine in leprosy, reports that following a discovery that adrenalin relieves, in a large proportion of cases, the nerve pains among leprosy patients, it was decided to try ephedrine, which has an action similar in many respects to that of adrenalin. It was found that ephedrine was more efficient and lasting in its action, having the additional advantage that it can be taken by the mouth, whereas adrenalin, to have any effect, must be injected. Ephedrine obtained its present reputation in the treatment of asthma and hay fever from the use of the optically active laevo-rotatory alkaloid. The synthetic product is optically inactive.

## Are the Professions Becoming Commercialized?

WILLIAM LATHROP LOVE, M.D.

STATE SENATOR, 8TH DISTRICT,

Brooklyn, N. Y.

Nobody can deny that there is a growing impression on the part of the "man in the street" that the profession of medicine is being commercialized. It is a natural sequence of this Jazz Age of rush and worry with the acquisition of money over-emphasized in the public press.

The old time family physician who was content to tend his practice seven days in the week, happy and satisfied in his human environment, is a thing of the past. He is as rarely found now as is the old fashioned horse and buggy. He has been superseded by the up-to-date doctor whose office is equipped with the most expensive physiotherapy apparatus, the X-ray, and various electrical devices. All these cost money, and the doctor who possesses them has invested many thousands of dollars, and feels that he has to get it back from his patients.

Then again, he comes in contact with a lawyer who is his patient, who speaks in a casual way of a "thousand dollars or five thousands dollars retaining fee." This lawyer has not spent any more time or money for his equipment and his education than the doctor. Why should he not command an equal fee for some operation or an involved course of treatment in which a life is saved? The doctor comes to think in terms of money just as the lawyer has been doing for a good while back, and unfortunately there are a great many people who are not impressed with the doctor unless he appraises himself superlatively in the matter of dollars and cents.

Dentistry, too, is a branch of the practice of medicine, and O my! how some of them do charge for a half hour of their valuable time. Really, dentists' charges are getting to be almost prohibitive, in some cases, to families of moderate means. From an economic standpoint, the osteopaths, who are now members of the great medical profession because the same State Board requirements pertain to them, have taught the medical profession a lesson in the line of finance. They used to be scoffed at when they gave a card to a new patient which would give so and so a dozen treatments "at a flat rate, payment in advance." The medical profession held up its hands in holy horror at a thing like that, but how does that differ from the lawyer's "retaining fee"?

Years ago it was a matter so common as to incite no comment whatever for a busy physician to die, and leave almost nothing to his family outside of thousands and thousands of dollars worth of unpaid doctor bills that they were never able to collect. The doctor was considered money-mad and with no sense of ethics who sent out his bills oftener than once every three months, or six months, and a good proportion of busy family physicians sent out their bills only once a year, and made a generous discount for cash.

In the last few years, however, the pendulum has swung the other way, and the professional fees asked by many doctors and dentists are really making the problem of ordinary illness to the family in medium circumstances one of anxiety and financial worry. Even at that, they do not compare with the fees exacted by many lawyers. I have often wondered why the public at large is so complacent at the idea of a lawyer taking half the verdict awarded to an injured man who has been the victim of an automobile accident. Frequently that lawyer has done nothing at all to justify such a fee

as that, but the law protects him, and the doctor in the case, who has possibly been summoned from his bed in the middle of the night more than once, and has been assiduous in his attention, frequently does not get 1/10th or 1/20th the amount that the lawyer in the case has received.

There is a marked disproportion between the fees of a first class specialist in the law and in medicine, and the unfortunate thing is, that this disproportion is tending to make the medical specialist still further increase his fees while the legal specialist stands pat.

One of the greatest problems of the future, as I see it, is the *Problem of Sickness in the Middle-class*. The very wealthy can command nurses and the best of medical attention; the very poor can go to the free hospitals and have exactly that same service for nothing, or for almost nothing; but the man of medium income who has a little family of three or four children is certainly "up against it" if one of the family develops a case of typhoid or pneumonia or even an ordinary obstetrical case.

The whole thing is working to popularize birth control, which is not legal, and which is disastrous to the future citizenship of our nation. It is imperative that the lawyers, the dentists, and the doctors get together for a fair, free, and frank discussion for the good of Society, to the end that these great professions *be not further commercialized*. There is no higher profession in point of service than the profession of medicine. From a personal standpoint, from my perspective of life as a member of the State Senate for the last six years, I am very glad indeed that I had the training of a doctor with the *human outlook* that it involves. The ultra-legal training that a lawyer receives is detrimental to human understanding. The "kick" that I get out of politics is in its possibility for real human service. It is a pleasure to have the power to help the other fellow—to extend a helping hand, and be able to smooth out the rough spots.

More men of our profession ought to get into the political field because there are so many matters coming up before us constantly in the Legislature that have the health tangent or the sanitary aspect or the human outlook. This can be made possible by partnerships among physicians—just the same as partnerships are advantageous to lawyers and to business men. A good surgeon and a good diagnostician teaming together can do much better work for the community, and with far less wear and tear upon themselves than if they maintain separate offices.

Partnerships or group medicine is the medicine of the future, and *the cost of illness must be kept down within reach of the man of moderate means*.

### Irradiated Ergosterol in Rickets

A. Aidin reports (*Lancet*, February 4, 1928) on the administration of irradiated ergosterol in rickets. Radiostol was given in each of five cases (ages from eighteen months to three years nine months), in doses commencing with  $\text{Mij}$ , and increasing to  $\text{Mx}$ , thrice daily. No cod liver oil was given. The patients were treated indoors in a hospital ward, and none showed any signs of intolerance. All the cases improved. Patients with marked deformities should not be given specific antirachitic treatment until the deformities are cured. The author expresses the view that actinotherapy in the treatment of rickets is rapidly becoming a thing of the past.

# Notes on Internal Medicine for the General Practitioner

MALFORD W. THEWLIS, M.D.,

CONSULTING SPECIALIST, GENERAL MEDICINE, U. S. PUBLIC HEALTH HOSPITALS OF NEW YORK CITY

New York.

**Anaerobic Antitoxin**—This polyvalent antitoxin, which has been used for gas gangrene, is well worth trying in cases of gangrenous appendicitis or intestinal obstruction. The dose is from 100 c.c. to 200 c.c. intravenously, repeated at intervals of six to eight hours.

**Treatment of Anaphylaxis**—Some observers find that acetylsalicylic acid in five grain doses, every three hours, beginning three days after the serum is given, will prevent some of the symptoms of serum sickness. It apparently works in some cases and fails in others.

**Mental Disturbances Due to Myxedema**—A woman, aged 41, had been in a hospital for insane on two occasions, with symptoms of dementia precox. Her history showed that her mother was insane but upon careful questioning it was learned that her mother was normal until after a cerebral hemorrhage. Physical examination was negative except that her basal metabolism rate was minus twenty-five. After one week's medication with thyroid extract, she was apparently normal. A month later she returned to her former mental state. She stated that she had not omitted thyroid medication and her husband was convinced that she had been taking the extract. When a check-up was made on the dates of the prescriptions and the amount of thyroid extract it was found that she had not taken the extract regularly. When this medication was resumed she was normal in a week. It is not always safe to take a patient's word about medication. In this instance the patient believed that it was not necessary to continue the medication after improvement but she now realizes that she must continue the use of thyroid extract as long as she lives.

**Cytodiagnosis**—Pleuritic fluid which shows many lymphocytes with red corpuscles is usually a further indication that the condition is tuberculous.

**Luminal in Small Doses**—In many instances luminal works well in 1/10 grain doses once or twice daily.

**Mild Silver Protein as a Substitute for Iodine**—Mild silver protein in a ten or twenty per cent solution works well as an antiseptic for wounds in place of iodine. I have used it for several years and find it a satisfactory antiseptic for general use.

**Nephritis Due to Diseased Tonsils**—It is not uncommon to see nephritis clear up after tonsillectomy.

**Encephalitis Complicating Chicken Pox**—While complications are not common following chicken pox, we should think of the possibility of encephalitis as several cases have been reported. Unlike the epidemic type of encephalitis, most of the cases following chicken pox recover without residual symptoms.

**Encephalitis Following Measles**—Encephalitis may complicate measles. In some instances the symptoms are not severe; in others the disease causes a severe disturbance. Encephalitis may follow mumps, as well as other infectious diseases.

**Celestins Vichy**—This water is commonly given to patients who are ill and they often take it over long periods of time. It is well to discontinue Celestins Vichy after a half dozen bottles have been taken, resuming after a few days. If continued too long it is apt to overstimulate the liver.

**Status Epilepticus**—Status epilepticus may be fatal. Lumbar puncture may be the means of saving life.

**Ouabain**—Ouabain is effective in cases of acute heart failure and may be given intravenously. It is marketed in ampoules containing 0.5 mgrm. in 2 c.c. solution. Vaquez employs Arnaud's ouabain. In acute heart failure Vaquez employs first a sixth grain of morphine hypodermically, followed in one-half hour with an intravenous injection of 1/240 grain of ouabain and in very serious cases 1/120 grain. Vaquez recommends, on the next and following days, a daily dose of ouabain, giving about 1/40 as a total dose in all.

Ouabain, a glucoside from *Acocanthera Ouabaio* or from the seeds of *strophanthus gratus*, is purer than strophanthin and has a more uniform action. By mouth it is uncertain.

Some observers continue the use of ouabain until the heart action is slowed down to 80.

**Hemoptysis Due to Bronchiectasis**—Hemoptysis is a fairly frequent symptom of bronchiectasis (non-tuberculous). Bronchiectasis, especially mild cases, is often seen in childhood. The disease may follow pneumonia.

**Infections of the Nose**—A pimple or furuncle on the outside or inside of the nose should never be opened or squeezed. There is danger of cavernous-sinus thrombosis, meningitis and pyemia. There is little danger if there is no interference. The same thing applies to infections of the upper lip.

## Epitome

1. Anaerobic antitoxin may be tried in cases of gangrenous appendicitis and intestinal obstruction.
2. Acetylsalicylic acid, given three days after the injection of antitoxin, may prevent symptoms of serum sickness.
3. Myxedema may cause severe mental symptoms.
4. Predominance of lymphocytes in pleuritic fluid suggestive of tuberculosis.
5. Luminal in 1/10 grain doses valuable in many instances.
6. Mild silver protein solution excellent general antiseptic.
7. Nephritis may be due to diseased tonsils.
8. Encephalitis may follow chicken pox and measles.
9. Celestins vichy should not be used over too long a period of time without discontinuing for a few days.
10. Lumbar puncture for status epilepticus.
11. Ouabain, intravenously, valuable in acute heart failure.
12. Hemoptysis frequent symptom of simple bronchiectasis.
13. Furuncles of nose or upper lips should never be incised. The same applies to furuncles of the auditory canal.

114 E. 54th St.

## Average German Lives to 60

The average duration of human life in Germany is now sixty years, or ten years more than before the World War, the Federal Statistical Bureau announces today. In 1910 the average was fifty years, in 1870 forty, at the time of Frederick the Great thirty and in the Reformation period only twenty.



## Prognosis in Malignant Disease

By HENRY CLARKE COE, M.D.

New York.

An interesting article on this subject in the *Lancet*, April 21, 1928, leads one to compare our present knowledge of this mysterious disease, based on the world-wide researches of the pathologist, with our limited experience before the days of bacteriology and experiments on animals, when radium and the Roentgen ray were unknown. Having been connected with the Memorial Hospital in this city since the cornerstone was laid, the writer feels that he can cite from personal experience some facts to prove that the prognosis was not far different from what it is today. We had always two wards filled with so-called "incurables", the treatment of which cases was practically nil, or was limited to such crude methods as curettement and the application of caustics. Sad experiences among his own family and friends has only strengthened his pessimistic attitude towards cancer and allied diseases. That scirrhus cancer was of low malignancy as compared with the medulla type was clearly recognized, as well as the effects of so-called "palliative operations" on retarding the progress of the disease.

Cancer *en cuirasse*, or general fibrous transformation, was clearly recognized before we had the benefit of modern radium and X-ray treatment. The writer, when a medical student, observed from year to year the transformation of the extensive ulceration of an inoperable cancer of the foreskin of an aged relative into a tumor of stony hardness, the patient dying of old age, with no apparent recurrence, either local or metastatic. Breast operations were not radical in those days, but he recalls the case of another patient, on whom he did a hurried operation, without invading the axilla on account of a serious heart lesion, from which the patient died several years later without recurrence. In a younger woman, upon whom a most extensive operation was performed as soon as a small nodule was detected in the breast, the pathologists diagnosis being "adenoma" (!), recurrence occurred in the mediastinal glands, and death within two years after an operation by a prominent, advanced surgeon, which would have been pronounced fully up to the present standard. The pioneer work of Dr. Byran of Brooklyn with his crude thermo-cautery, has apparently been forgotten. No case of carcinoma of the Cervix uteri, however advanced, was dismissed by him as inoperable. His statistics (buried in the old transactions of the American Gynecological Society) will bear careful study even at this day. Dr. Byrne was a most conscientious observer and kept track of his patients until their death.

We would scout at high amputation of the Cervix for cancer at the present day, yet the writer *knew* that the wife of a well-known physician was free from recurrence ten years after operation. He, recalls, while writing, the cases of three of his own patients alive and well after this period. No cancer can be regarded as "cured" until ten, not five, years have elapsed since the operation. The reader is referred to a paper read by Dr. George Gray Ward before the recent meeting of the British Medical Association published in the *Journal of the A. M. A.* in August of this year) which shows the results of the follow-up at the Woman's Hospital for ten years. The writer invariably performed vaginal hysterectomy—too after it must be admitted in improper cases—and still sticks to the old fashioned total abdominal hysterectomy, having given Wertheim's method a fair trial

and dismissed it as unsatisfactory, from a surgical, as well as from a pathological, standpoint. Moreover, we early recognized the "low malignancy" of adenocarcinoma of the body of the uterus, especially if early recognized by diagnostic curettement. The writer published a crude paper on so-called "malignant adenoma" of the endometrium many years ago, calling attention to this now familiar fact. Of course the pre- and post-operation application of radium and the X-ray have improved notably the statistics of radical cure in these cases.

The writer hopes that these scattered reminiscences will be of interest to the modern reader, for they go to prove our contention that prognosis in malignant disease is still uncertain.

30 Fifth Avenue.

### Operability in Cancer

Benjamin Rice Shore, New York (*Journal A. M. A.*, May 26, 1928), investigated the operability of 1,000 consecutive cases of malignant disease. The main and perhaps the only thing to be learned is the fact that patients with cancer are in a deplorable state before they are even seen by a physician. In this series, 68 per cent of the cases were inoperable so far as anatomic removal of the growth was concerned. Many more of the remaining group of patients died as the result of recurrences. A far greater number of early cases would be detected if a routine and complete examination were done on all patients at their first visit to a physician. The cases most likely to be detected earlier are those of the skin, buccal mucous membranes, breast, cervix uteri, and rectum. All these growths are palpable and all, excepting those of the breast, can be brought under direct vision. Theoretically, all malignant growths can, in the early stages, be completely and wholly removed. The time to do this is before they produce symptoms, and such growths can be found only by careful and complete physical examinations. There still remains the responsibility of the patients themselves. It is rare to find a person who is not afraid of the truth, at least so far as cancer is concerned. Aside from not wanting to know the truth, many persons believe that cancer places a certain stigma on the family and, though suspecting the presence of cancer, stay away from a physician as long as possible. The reasons just given are probably the main ones to account for the fact that in this series the average time elapsing after a patient noticed a lump in her breast and the time that she sought treatment was 350 days—almost a year. Nothing but intensive and widespread education of the public concerning the necessity of routine and complete physical examinations and the urgency of such an examination as soon as any unusual growth or symptoms are noticed can eliminate such negligence in the future.

### Etiology of Backache

For etiology of backache consider the following:

1. *From disease per se.*—a, Chronic arthritis of vertebra; b, lumbar myositis, often from focal infection; c, potts or tuberculosis; d, scoliosis and other deformities; e, sacroiliac pathology from strain, arthritis, and subluxation; and f, malignancies. The case just presented has a and b.
2. *Conditions of back resulting from injury.*—a, Fractures; b, sprains and strains; c, dislocations; and d, contusions. This patient had ample opportunity fifteen years ago for b and d.
3. *Faulty posture.*—a, Flat feet; b, short legs from fractures, poliomyelitis or osteomyelitis; c, protuberant abdomen; and d, ankylosed knee or hip. Our patient has a, and her abdomen is large.
4. *Acute infections.*—Influenza, smallpox, typhoid and other acute infectious diseases.

Unless a correct diagnosis is made of the cause, the treatment of backache will not be successful. In a word the best treatment of vertebral disease is rest. This secured by a correct fixation of the spine in a position which is free of pain. The searching for and removal of focal infection must be remembered as an existing cause of backache. It is a frequent cause of myositis.—John W. Shuman, M. D., in *Med. Jour. and Record*, May 16, 1928.



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## War and Disease

Never before the present time have the nations of the world seemed to be more in accord in desiring to abolish war—once called "the sport of kings," now regarded as folly and madness. Its aftermath is still with us in ruined homes and hopeless cripples, not to speak of the disease and death brought upon thousands of innocent women and children. That war will be eliminated in this century as a means of settling disputes and jealousies among neighboring peoples is not regarded seriously by thoughtful men, who view with distrust the invention of new instruments of destruction, the persistence of ancient feuds in Europe, the fact that human nature remains essentially the same now as in past centuries. But we hope and pray that there will never be another world war, but only local strifes, to be speedily settled by powerful pressure of nations banded together to prevent and end them by peaceful methods.

Alas! War is so much worse than were the widespread epidemics of the Middle Ages. These did from an economic standpoint serve their purpose in reducing over-population and weeding out the unfit. But war takes the best and fittest of a people, the young and strong, leaving the unfit to cumber the earth. It does raise the morale of a nation and foster deeds of bravery and sacrifice, but cruelty and hatred are its darker offspring. A nobler, a beneficent war has been waged unceasingly throughout the ages, for over the "Four Horsemen of the Apocalypse" has brooded ever that angel of mercy, the healing art of the physician. Ambrose Paré, Larry, and many other great surgeons helped to rob war

of its horrors. In peace we recall Hippocrates, bridging the centuries to Maimonides, Harvey to Noguchi—all had the proud epitaph of the soldier: "Died in the line of duty."

We live in a wonderful age and "it doth not yet appear what we shall be." But above all the triumphs of our modern sciences tower the rapid advances in the study and treatment of disease. The past summer has seen the eyes of the scientists throughout the world focussed upon the vital subject of cancer, the ultimate cause of which still eludes us, but not for long. Just as the lonely astronomer sweeps the heavens with his keen eye in search of a new star, so the patient laboratory worker, beside his microscope, searches eagerly for the elusive factor and will not be denied.

Old age, death—these are mere episodes, the natural end of cell-growth, as cancer is an aberrant, abnormal outgrowth. What are such old friends as age and decay to us to whom is left the precious legacy of the past to hand down to those who come after us and take up an unfinished work? We are all enlisted in the war against disease, a few as leaders, most of us humble followers in the ranks.

"We are compassed about with so great a cloud of witnesses," who doubtless now see clearly truths yet hidden from our narrow vision.—Henry C. Coe, M. D.

## How Progress is Determined

Progress in the machine era, according to some philosophers, has resulted from laziness; what the inventors have in mind is the avoidance of drudgery. Hence the labor-saving quests.

So one may say that much progress in medicine has resulted from the deficiencies of organs; what the doctors have in mind is the avoidance of strain—the supplementing of the patient's powers. Hence the quest for the hormones.

If there were no organic deficiencies to challenge us there would be no progress.

An era of vigorous health would seriously impair the progress of medical science.

And yet the aim of the healing art is the cure of disease.

The doctor is really aiming not only to abolish sickness but medicine as well.

This ideal, however, let it be honestly said, is no more realizable than the abolishment of law by lawyers through the abolishment of injustice, or the abolishment of religion by priests through the abolishment of sin.

Progress will continue to be made, which is to say that more and more we will discover new and more beneficially effective ways to supplement nature when nature lags.

## As to Ballyhoo

Our people have developed a great flair for emotional sprees *en masse*. All sorts of public events are made the occasion—or the excuse—for ballyhoo. About these ebullient expressions of mob excitement there is always the atmosphere of *conviviality*. The term which best expresses the state into which the vast mobs work themselves on these occasions is *intoxication*. Getting emotionally drunk all together yields a great kick.

This has been called an age of excitement. Mass emotional sprees release the mob from boredom for a period of time.

Primitive man's life was full of thrills and the zest of his struggles obviated boredom.

Bertrand Russell says that the hysterical outbursts of the Middle Ages were due in part to boredom to which the lack of tea, coffee and tobacco contributed. Alcohol mitigated the plight of the people to a considerable extent, and without it the medieval mass insanities would have been much more intense.

It seems reasonable to deduce from the mob emotionalism now so striking a social phenomenon that the high cost of alcoholic beverages imposes special strain upon great unprivileged sections of our population, at least at times, and a super-emotionalism is substituted for the familiar device of the older culture.

There would seem to be no doubt as to which reaction to life is the more wholesome and civilized—which charged with the greater dignity.

### At the Hospital's Portal

Why is it that in some of our institutions the conditions attending the admittance of other than private-room patients are so bad? These human beings, with bleeding heads and failing hearts, sit on benches in drafty halls for long periods at times, or are subjected to other strains and indignities. The hospital employees immediately concerned are usually kind and well-meaning enough, and frequently deplore the system in vogue, but they are helpless to remedy conditions; some of the higher-ups realize their institutions' shortcomings acutely but confess a total lack of ideas regarding a proper solution. It seems a curious impasse.

We understand that the method resorted to by Cardinal Mundelein of Chicago, to improve such conditions, was effective. He disguised himself as a workman and applied for admittance to a hospital. He learned much and acted vigorously.

It would seem that organized labor and the press might intercede effectually with the stupid governors of such institutions—after quiet and thorough investigation after the manner of Chicago's eminent churchman.

### The Child

A paradoxical state of affairs exists to-day with respect to parenthood in that great forces militate against the bearing and rearing of children at the same time that our understanding of and interest in childhood were never so deep.

Economic and other factors say nay to the successful raising of a family, while the child himself is the cynosure of all types of psychologic, humane and educational considerations.

The child is to-day regarded as the most precious and interesting of the world's exhibits, and the development of child study is the most intensive of recent phenomena.

And yet, all things seemingly conspire against parenthood.

One may regard the matter cynically or hopefully, according to one's "slant."

The very fact that modern man is awakening to the preciousness of childhood seems to us to presage ultimate good.

When the full awakening comes revaluations will ensue which will force a rational adjustment, all along the social line, to the integral rights of both parenthood and childhood.

### The Perils of Education

In an address recently delivered at the opening of a hospital in New York City, a prominent physician made the following remarks:

"The hospital is a character builder. What the hos-

pital does to the doctor is well known, but what it does for the patients along these lines is not so well known. It is surprising to see what a veritable education a stay of two or three weeks in the hospital is to the patient. When you see these patients later they talk about calories and vitamins; they want to know whether it is time to take a blood chemistry; whether their urine contains albumin or sugar; they are no longer afraid of hypodermic medication; and their only difficulty is reading their thermometers, whose markings are worn from excessive use."

The speaker evidently viewed such a *dénouement* as wholly desirable.

## Miscellany

### Austrians Nominate Pirquet for President

Professor Clemens Pirquet, noted physician, was today nominated for the Presidency of Austria to succeed President Michael Hainisch, whose term expires at the end of November.

Professor Pirquet, who is a children's specialist, superintended the work of the American and British children's relief organizations in Austria after the war. He has lectured in the United States.

It is understood that friends of President Hainisch are urging him to run for a third term.

The only other candidate is Professor E. Wettstein, a noted botanist. Under the law political leaders may not be candidates for the Presidency.—*N. Y. Times*.

### Sanctions Doctors' Aid

Mrs. Annie C. Bill, leader of the Christian Science Parent Church, which is understood to have been organized in 1924 by seceders from the original Christian Scientist movement, announces cooperation between members of her church and medical practitioners in the treatment of patients.

Catherine Aller of the Press Committee of the Parent church said in a statement yesterday that the announcement appears in the August number of *The Christian Science Watchman*.

"New by-laws have been added to the church manual, permitting the members to render mental aid to patients when their services are required, 'provided the doctor or surgeon has approved such a request,' " the statement reads. "Members are privileged to confer with a physician of recognized standing, who shall consult them 'on the psychological effect produced by thought on the bodily condition of a patient.' They shall render only metaphysical aid."

The statement also quotes the new by-law as prohibiting a member of the church from studying anatomy, medicine or surgery, and adds: "Neither shall he meddle in any way in medical or surgical practice, but shall leave such practice entirely in the hands of those duly qualified and legally authorized therefor," and "fees of the practitioners shall be consistent with the spirit of Christian Science healing, which is 'a sacred ministry into which neither commercialism nor financial rivalry with medical specialists can enter.'"

The statement says that up to the time of the change in the by-laws of the Parent church cooperation between Christian Scientists and doctors had been officially condemned by the majority of Christian Scientists, "although a by-law of the church, dating back to Mrs. Eddy's leadership, specifically permits members to consult with physicians."—*New York Times*, Aug. 31, 1928.

### Three-Day Fete Opens for 77-Year-Old Physician in Bunker

Hundreds of the "children" of Dr. J. B. Gordon, seventy-seven-year-old country physician, are coming back to Bunker (Missouri) today for a three-day homecoming in his honor.

The doctor will be there to greet his "children," and at informal programs will give reminiscences of his long career.

Since 1871, the doctor has guarded the entire population of Bunker, made up of those he has attended at birth in the fifty-six years he has practiced here.

Every one of the 725 residents of the village was busy to-day with final preparations for the celebration—every one, that is, but the doctor—he was too busy. Another baby, a girl, was born Monday, bringing the list of those he has ushered into the world to 6,744.

"Times have changed since I attended that first birth," the doctor recalled. "It's terrible how the price of being born has risen. I helped the stork in 1871 for \$5; now I charge \$25 for such a case.

"And how traveling conditions have changed. For twenty-six years I rode on horseback. There were no roads then, just paths that wandered through woods that were filled with deer, turkey, coons and small game. Then for years I rode in a buggy. Now I drive an automobile."

Despite all the hardships he has undergone, the doctor is happy in caring for his community. It is wholly his community, for, despite his age, he is active in his practice; and there is no other doctor there.

He's a typical country doctor, who has ploughed through mud, dust or snow, day or night, for the meager reward that is (sometimes) given him. Long, weary hours he has waited in many farm homes for the arrival of the stork.

It has not been altogether easy to lead that life for fifty-six years instead of one with more regular hours and better equipment in some city office or hospital. But his "children" are returning this week to tell him how they appreciate his unselfishness and service—*Evening World*.

### The Chiropractors

The chiropractors boast that they are in New York State to stay, and, licensed or unlicensed, regulated or unregulated, will continue the practice of their cult. The facts support them. No headway has been made in their abatement. This state is a happy hunting ground for a horde of spinal adjusters, some of whom have had a respectable education in their specialty, while a great many others are known in the better circle of chiropractic to be thoroughgoing quacks.

It is this situation which has induced the State Commissioner of Health, although with great reluctance, to admit the need of legislation to grant the spine manipulators a legal standing. If the state cannot get rid of the chiropractors or chooses to harbor them, it is manifestly wiser to set up a strict license system and adhere to it than to let charlatans and all run loose. If chiropractic is recognized, the bona-fide practitioners who pass the requisite examinations will find it to their advantage to assist in driving out the impostors.

No licensing measure should yield an inch to the pretension of chiropractors to rank on a parity with physicians. On no account should they be allowed to parade as "doctors," as they do at present. The great peril from this cult is its imposition on the credulous who are led to believe that a chiropractor is a qualified physician. State Commissioner Nicoll insists that chiro-

practors shall not be licensed to treat any case of contagious disease. They should be required to prove that they have skill enough to recognize disease.

There is a choice between two courses. Either license chiropractors who have passed an adequate examination at the hands of an impartial board to practice their strictly limited specialty or make a determined test of the power of the state to outlaw the cult altogether.—*Herald-Tribune*.

### CONTROL OF LAY HEALTH AGENCIES

#### Rules for the Control of Lay Health Agencies

After a prolonged study of the situation which arose between the Cattaraugus County Medical Society and the Milbank Health Demonstration, the Medical Society of the State of New York at its annual meeting in May, 1928, adopted eight fundamental principles as a tentative code for all relations between the medical profession and lay health organizations. This public health platform, while framed to meet the Cattaraugus County situation, is of sufficiently general application to constitute a guide to public health relations in any field. Several other state societies have indicated their intention of adopting it, in slightly modified form, to apply to similar situations which have arisen or may arise in their fields of activity.

(From the official minutes of the House of Delegates of the Medical Society of the State of New York.)

The Secretary introduced the following resolutions:

**Resolved:** That the following general principles be adopted by the House of Delegates as a basis for the conjoint work of the medical profession and voluntary public health agencies in the carrying on of public health work:

1. The essential part of public health work being preventive medicine, there should be no failure on the part of official and unofficial health and welfare organizations to recognize the importance of the local practising physician.

2. All those associated in the conduct of public health activities must recognize fully that preventive medicine is the doctor's rightful field and that laymen must at all times look to the medical man for guidance and leadership therein.

3. Public health work within a county involves three participating factors—lay organizations, official governmental agencies, and the members of the county medical profession.

4. The evolution of a county health program should be the evolution of medical forces within the county. It is the duty of the local physicians to assume leadership in the organization of a county health department.

5. The function of lay organizations and employees of the county health organizations, acting under the leadership of the practising physicians of the county, includes assistance in educational work, in helping those who are unable to carry out the doctor's advice, and in providing means whereby the public health program may be carried out.

6. Lay organizations are needed in the county. Their cooperation is to be welcomed by the physicians. They are needed for the great educational work they can do, for their influence on public opinion, legislation and laws, and in many other ways. But preventive medicine must be controlled and guided by the medical men of the county.

7. As the function of the county health officer is not to exercise the function of the physicians of the county but to explain the facilities and stimulate the use of these facilities by the citizens, therefore, before any in-



novations are put into effect by a demonstration or other agency, they should first be thoroughly studied and discussed by the medical society and the professional membership of the county board of health.

8. All local publicity should be of fact and simply to inform the people of the county of public health work which is being done, why it is being done, and why it should be done.

*Referred to Committee on New Business*, which recommended that the statements expressed in the eight general principles be adopted as the Public Health principles of the Medical Society of the State of New York.

*Moved, seconded, and carried unanimously.*

REPORT on practical developments in establishing sound relations between medical and lay agencies in public health work, as shown in the investigation by the Medical Society of the State of New York into the controversy between the Cattaraugus County Medical Society and the Milbank Health Demonstration, and dealing with the mistakes of the Milbank Health Demonstration as it has operated in Cattaraugus County during the past six years. This report is submitted to the members of the Cattaraugus County Medical Society by its representatives at the annual meeting of the Medical Society of the State of New York.

In New York State, three typical health demonstrations are being financed by the Milbank Foundation. One of these is located in Cattaraugus County, another in the city of Syracuse, and the third in a limited section of New York City.

Both the Cattaraugus and the Syracuse demonstrations have been subject to continued and serious criticism from the medical profession, owing to the policy of the lay administrators of the demonstrations to ignore the profession in the management of their experiments. The Cattaraugus demonstration is now in its sixth year, while the Syracuse demonstration has just announced its intention of continuing for a second period of five years without regard for the opinions or wishes of the organized medical profession in that city.

The State Medical Society during the past year has made a prolonged and careful study of the Cattaraugus County demonstration, and detailed reports on the results of these studies were submitted to the annual meeting of the State Society in May. Consideration of these reports resulted in sweeping condemnation of the officials of the Milbank Health Demonstration, together with the unanimous passage of the following resolution:

*Resolved*, That the House of Delegates of the Medical Society of the State of New York sustain and endorse the protest of the Cattaraugus County Medical Society in its opposition to the Milbank Health Demonstration as at present conducted by the State Charities Aid Association, because the Milbank Foundation has not governed itself either in spirit or practice by the principles laid down by this society for the conduct of its members in their relation to public health work conducted by lay organizations.

This resolution appears to make absolutely clear the standpoint of the medical profession in regard to demonstrations of the character attempted in Cattaraugus County during the past five years. Similar action in condemnation of the Milbank Demonstration in Syracuse has been suggested to the governing medical bodies, and developments along this line may be anticipated during the coming year. The Syracuse Academy of Medicine has ordered a formal investigation of the situation, for the purpose of preparing formal reports on the mistakes of the Milbank Demonstration there, and demands for the correction of the objectionable phases of these lay

health activities. It may be expected that aroused medical opinion in Syracuse will follow the same steps as in the Cattaraugus County Medical Society, and that the principles formulated by the State Society will be rigidly applied in Syracuse, with the inevitable result of outlawing the offending lay group. Meanwhile the Milbank Foundation is reported to have volunteered the appropriation of an additional \$500,000 for financing its experiment during the next few years.

The situation in Syracuse has grown rapidly more acute during the past few weeks. A member of the local medical society reports to the Secretary of the Cattaraugus County Medical Society as follows:

"Colossal waste of public funds on a self-seeking health demonstration continues here. From the medical viewpoint the efforts of the demonstrators are often absurd and ludicrous. For example:

"A former deputy health officer here recently reported a case of contagion. The Milbank nurse came as usual to 'give instructions.' She suggested a serum treatment by a member of the demonstration staff. The mother suggested, 'I will speak to my family doctor first.' The nurse replied, 'Why bother with him? Surely he doesn't know as much about these cases as our specialist?' The specialist is presumably a youthful graduate whose practical experience is limited to work under lay bodies. The mother urged: 'I guess you don't know who my doctor is! He was health officer here for years and is an official of the county medical society.' This had no effect on the nurse, who responded quite casually, 'Well, I never heard his name even; I don't think he can amount to much.'

"This is the kind of seed which is being sown among the public by employees of the demonstration."

It is obvious from this and many similar reports that the local medical profession is receiving scant consideration from the officials of the demonstration in Syracuse.

The whole future of public health work and preventive medicine in the United States is being molded and charted by the controversies which are going on in Syracuse and in Cattaraugus County. The controversy in each case is between the medical profession and a number of untrained social service groups who have endeavored to impose a health unit in which the medical profession is relegated to a subservient position.

In the Milbank effort in Cattaraugus County, more than half a million dollars has thus far been expended by the demonstration officials—with indifferent results.

An aroused medical profession has now definitely taken up this challenge to the public health. During the past year officers of the State Medical Society have unselfishly given their time and effort to a formal investigation of the Cattaraugus controversy. It was hoped that common ground could be found for settlement of the difficulty, and officials connected with the Milbank Demonstration agreed readily to proposals that such a common ground be sought.

A protracted series of conferences resulted, from which emerged a protocol or Program of Eight Points, upon which all parties agreed. This looked like real progress, but when the representatives of the social service groups were asked to endorse and approve the agreements of their conference representatives, nothing happened. The Demonstration officials in Cattaraugus County refused to be bound by the agreements of the conference, and the conference agreements therefore fell down without result.

The representatives of the State Medical Society in these conferences acted in good faith, and received the formal thanks of the Cattaraugus County physicians. The representatives of the social service groups, how-



ever, appear to have gone into the conferences solely for the purpose of taking full advantage of every concession by the medical members of the conference.

The situation in regard to the Cattaraugus County Demonstration, therefore, remained in *statu quo*. The Demonstration continued, despite the expressed and recorded wishes of the medical profession of the county. No effort was made to meet the desires of the physicians.

The members of the Cattaraugus County Medical Society therefore respectfully suggested to the House of Delegates the following action:

*First: An endorsement of the attitude of the Cattaraugus County Medical Society in its opposition to the Milbank Health Demonstration as conducted by the State Charities Aid Association.*

*Second: Approval of the Eight Points outlined by the State Society's conferences.*

*Third: Instructions to the officers of the State Medical Society that these Eight Points be regarded as the approved program of the State Society in all dealings with representatives of lay health organizations.*

*Fourth: That the State Society invite and urge the Milbank Demonstration to withdraw from Cattaraugus County at the earliest practicable moment.*

We consider the eight fundamental principles which were adopted by the State Society as a great forward step. We urge the formal recognition and adoption of these Eight Principles as a guide and basis for public health work throughout the nation.

The fact that these principles failed of adoption by the Milbank officials in Cattaraugus County is a matter of regret, but this failure only adds to the importance of establishing them in advance of any further encroachments by this same group of social service "experts" or their imitators.

For the information of the profession, we have herewith formulated the chief points of our charges against the Health Demonstration in Cattaraugus County (as summarized by Wm. Ross, M.D.):

We showed in our presentation to the State Society's conferences that the Demonstration was to a considerable extent conducted during its early stages by practitioners unlicensed in the State of New York, thus breaking the laws of the state.

We showed that employees of the Demonstration had practised medicine in violation of the laws of New York State.

We showed that employees of the Demonstration had made disparaging remarks regarding the medical profession, and regarding the competency of physicians in Cattaraugus County.

We showed that the Demonstration deliberately created and organized public sentiment for its own continuance in office, by making use of every lay organization it could find, including the Jolly Eight Card Club and an unimportant nursing organization in a remote township, in order to persuade the county government to continue the Demonstration. At the same time, it did not use the same diligent methods to ascertain medical professional opinion, nor has any such effort been formally made since early in 1926.

There have been continued in authority administrative heads that were offensive in words and acts to the only body which could have been of real value to the Demonstration in its allegedly altruistic health campaign.

In spite of the above situation, the physicians of Cattaraugus County agreed to forget and forgive the past, if the Demonstration would change its tactics. They promised to assume constructive leadership in all public health activities and to recognize their responsibility as

the only authoritative source of medical information regarding the preservation of health. They agreed to have confidence in the Demonstration and to cooperate with it. These advances, made at the suggestion of the State Society, were ignored and refused by the Demonstration.

In agreement with the officers of the State Society, the county physicians offered a sound method of deciding at the end of 1928 regarding the continuance of the Demonstration, agreeing to accept the verdict of the highest officers of the Council of the Medical Society of the State of New York in conference with the officers of the county medical society. This arrangement, in part endorsed in conference by Homer Folks and other representatives of the Demonstration, has since been rejected by them.

Finally, the county society agreed to a statement of Eight Fundamental Principles, which were approved in conference by representatives of the Milbank Foundation, the State Charities Aid Association, the State Medical Society and others. But when these principles were submitted to the local representatives of the Demonstration and the Director of its activities, he declined to endorse them or recommend their adoption by his board. Every agreement made with one branch of this curious organization is subject to refusal by another. Each official has apparently many different individualities and positions, and is ready always to plead his *alter ego*.

We know full well that lay groups can continue to operate this Demonstration and others like it, if they wish, employing administrative heads who will follow completely the desires of the men who hold the purse strings. But we also know that the medical profession of the state and nation, having placed its hand to the plough, will not turn back. It will organize itself for administration of this kind of work, and in time will strikingly succeed. Every doctor's office should be, and eventually will become, a health center.

The situation in Cattaraugus County has attracted such widespread attention that the highest officials of the Milbank Foundation were constrained a few months ago to spend several days in Chicago for the purpose of defending their position to the American Medical Association, which heretofore has not entered the controversy, but which must now give it some attention unless the situation is remedied. These high officials devoted a considerable portion of their platform time in Chicago to violent attacks on the medical profession, alike in Cattaraugus County and throughout the country.

Now, because of the widespread knowledge of the Cattaraugus County situation, a complete clarification of the relations between medical bodies and lay organizations will pave the way to a constructive understanding everywhere and will undoubtedly mean much to the cause of public health.

#### Fractures of Lumbar Vertebra Due To Hyperextension and Extreme Muscular Action

Clifford Lee Wilmoth, Baltimore (*Journal A. M. A.*, July 7, 1928), reports seventeen cases of fracture of the lumbar vertebra due to hyperextension and extreme muscular action. He says that fractures of the transverse processes or chip fractures of the lumbar vertebrae are of relatively frequent occurrence and are due to forced hyperextension of the spine or to sudden extreme muscular action. They may be a history of only the slightest trauma.

#### Deaths on Increase From Automobiles

Fatalities from automobile accidents during the 52 weeks ended August 11, as reported by 77 cities, numbered 7,223 as compared with 6,996 for the same cities during the 52 weeks ended August 13, 1927, the Department of Commerce stated September 4.

## Social Medicine

### A \$500,000 HEALTH BLUNDER

R. B. MORRIS, M.D., F.A.C.S.

SECRETARY CATTARAUGUS COUNTY MEDICAL SOCIETY

The failure of the \$500,000 "health demonstration," inaugurated five years ago in Cattaraugus County by the Milbank Memorial Fund, appears to have been due almost entirely to its lack of cooperation with the local medical profession.

While the demonstration still continues, in hopes of somehow salvaging the broken prestige of its official backers, the result has been, in the words of one of its own officials, "to set back ten years the course of this type of public health work in America."

Physicians of state and nation may well consider the money well spent, if this result has really been achieved, for certainly this effort has demonstrated conclusively the *wrong* way to conduct a health demonstration.

The whole problem of public health is in a state of evolution, and the unhappy experience of Cattaraugus County may well be an important stage in the education of the medical profession toward leadership in preventive medicine.

The Milbank demonstrators, coming into this rural New York county five years ago, made every mistake that the traditional "city slicker" would be expected to make on arrival in the country districts. For nearly five years the local physicians were patient and tolerant with these ineptitudes and blunders, but at the end of the five-year period they rose in their might and smote the Philistine.

In general, the only replies that the doctors have received from the welfare organizers have been a pained gesture of apology, and a perfunctory promise of better things. Lip service comes easily from the salaried functionaries of so-called social service, but the promises of one official or secretary are promptly negated or disavowed by another, and there is no remedy to the evils complained against.

Soft words flow from the pens of the "secretaries," whose number is legion. For example, a recent statement by an official of the Milbank Demonstration regarding its policy in Cattaraugus County is as follows: "The backbone of health work has been, is and always must be, the practising physician. There is no failure to recognize this on the part of the Cattaraugus County Demonstration. . . . We recognize fully that preventive medicine is the doctor's rightful field, as is the development of all public health work, and that laymen must at all times look to the trained medical man for guidance and leadership."

These are honeyed words. No better platform could be stated for the upbuilding of a sound public health program. But not a single action on the part of the visiting demonstrators in Cattaraugus County can be produced to show any intention to carry out that platform.

Their attitude toward the medical profession has been one of persecution and even abuse. Although 90 per cent of the practising physicians in the county have stated their position clearly and unequivocally in condemnation of the demonstration, the Milbank spokesmen have preferred to hide their heads in the sand like the ostrich. In a recent pronouncement they proclaimed, in stubborn contradiction of the facts: "Less than a fifth

of the membership of the county medical society is opposed to the demonstration."

Even today, in the sixth year of their imposed demonstration, they proclaim far and wide that the only opposition to them comes from a "small minority group," their attack centering on the president of the county medical society, who has loyally and faithfully expressed the will of his colleagues and who has the unanimous support and confidence of the practising physicians of the county.

When the Milbank demonstrators came to Cattaraugus County five years ago, they announced that they proposed to build up a county health unit after the plan successfully operated in Alabama by Dr. S. M. Welch. But in order to keep the control of expenditure and administration closely in their own hands, they made one fatal change in Dr. Welch's plan—they substituted lay control for medical supervision. This is made clear in a letter recently received by our county society from Dr. Welch, who says: "We have no trouble in Alabama, because the medical profession in this state directs all public health activities. No health activity is ever undertaken until the approval of the local medical men has been obtained. The State Medical Association of Alabama is the State Board of Health. The county boards of health are composed of five doctors, elected by the county medical societies. Thus we avoid friction, and the work is not pushed aside by well intentioned but untrained people. The physicians are the one group of people whose professional training fits them for this work."

The county health unit instituted by the misguided Milbank demonstrators in Cattaraugus County was composed of four laymen and one physician. This alteration in Dr. Welch's ideal and successful unit changed its fundamental principles in such a radical and basic way that failure was foreordained. All the expenditure and elaborate machinery installed by the welfare workers cannot save it, because it is built on an impossible foundation.

Few physicians can find any merit in such an organization. It is no exaggeration to state that its most sincere and enthusiastic advocates are obviously unfamiliar with the full purport and essential details of the measures they propose. Reformers and uplifters have been allowed to invade the field of medicine, until the peril of the situation has become urgent.

The drift toward paternalism and pauperization is strong. The tendency toward socialization of medicine is openly avowed by many supporters of the Milbank group. But the chief criticism of their operations, on the part of the medical profession, has been the utter ineptitude and inefficiency of their operations.

The slogan that "public health is purchasable" has an alluring sound; it has been bandied up and down the highways and byways of Cattaraugus County now for five years. But the \$500,000 worth of health which the demonstrators have brought us has been pitiable in quality, and every physician in the county has been face to face with a daily demonstration that social service cannot compete with the individual skill and superior knowledge and efficiency of the trained and capable practising physician.

A few days ago I received from one of the Milbank clinics a card showing the result of their examination of one of my own patients, who had been guided to their portals by the ubiquitous health nurse. The examination was made hastily, as all such examinations must necessarily be; the attempt at diagnosis was laughable, and the accompanying X-ray portrait was obviously the pathetically inadequate work of some stenographer or

\* An address before the Erie County Medical Society, Buffalo; also delivered before the Washington County Medical Society, Hudson Falls; and the Alleghany County Medical Society, Wellsville.



office boy. Such inefficient clinical work merely makes the Demonstration the laughing-stock of any qualified practitioner, however solemnly it may be taken by the untutored public.

Our medical society, thinking primarily of the good of the general public, can honestly do nothing else than protest emphatically and continuously against such quackery. A large proportion of the money which has been spent has been wrested from the taxpayers of the county. A large part of it has been expended in the gathering of statistics specially designed to demonstrate the success of the Demonstrations. At the end of each year the official statisticians have told us elaborately and plausibly, the tremendous achievements of the year. The statistician may be able to fool his employer, but he cannot fool the county doctors, who are on the field day after day and week after week, watching the aimless and purposeless meanderings of the county health workers.

If the principles upon which the Cattaraugus County Demonstration has been operated were accepted by our profession, then the doctor becomes merely a machine, controlled by the foolish and passing fancies of an ambitious lay organization. The public is of small importance to these folks; personal aggrandizement is the keynote to their every action. Strings are pulled in New York, and puppets jump strangely hither and yon at points 500 miles away. Statistics become the all-important aim of scientific medicine, and nothing is worth while that cannot be reported in tens of thousands.

From the beginning of our unhappy demonstration the medical profession of the county was a real problem to the folks who directed the demonstration. If they could have come to a nice clean county, without a doctor in sight, they could have organized an orderly and military demonstration. School children could have been marshaled in groups of hundreds, measured perfunctorily and separated into statistical divisions where tonsillectomies and similar approved procedures could have been performed in accordance with a routine forwarded from G. H. Q., 500 miles from the battlefield. A well-trained staff of statistically minded medical men could have been marshaled from graduating classes of obscure schools. The human side of medicine could have been forgotten, and attention focused on the glories of complete statistical triumphs.

But the local medical men of Cattaraugus County were a problem. It was hard for them to admit that the lay social worker who suddenly invaded the field possessed such a superior intelligence or was such a superman that he had solved, in advance, all the medical and medico-social problems which have occupied many wise medical thinkers during several centuries. The hard-headed country doctor soon became convinced that these invaders were quite ordinary folks, equipped with just about average intelligence and a good deal less than average knowledge of the practice of medicine. He promptly diagnosed their program as the result of exaggerated ego, and discarded it as impractical. Medical service must needs be personal and discriminative. Preventive medicine or public health offers no field for the untrained layman. It is still medicine, and needs the untrammeled leadership and guidance of the trained physician.

It is an amazing revelation of human stupidity to find the followers of this lay organization accusing the medical profession in Cattaraugus County of a lack of sympathy and a failure to cooperate in their program.

A surprising mental strabismus is the prevailing evil among these professional reformers and altruists. They get their minds fixed on trifles, ignoring the major con-

siderations which must guide the practical program of the practising physician.

Cattaraugus County during the past five years has been the Lexington and Concord of a great battle which must presently be fought out in every corner of the country. The writers and speakers and executive secretaries are assembling their mass attacks on the American mind, offering panaceas and short cuts to universal health and happiness. There are no panaceas; there is no short cut. When the smoke has cleared away, in your county and in ours, the family physician will still be faithfully at work, delivering the goods.

### MEDICAL SOCIAL SERVICE\*

L. L. BIGELOW, M.D., F.A.C.S.

PRESIDENT OF THE OHIO STATE MEDICAL ASSOCIATION

A fantastic idea of what is going on in the field of medical social work is to be obtained from the experiments in Richland County, Ohio, and in Cattaraugus County, N. Y., where heavily endowed foundations with millions at their disposal have demonstrated on a large scale.

Is it not natural for the enthusiastic young social service worker to have her mind so filled with what is before her and her sympathies so stirred, that like the young medical student she loses her sense of proportion and becomes a willing tool for the hands of those queer thinkers who are obsessed with the idea that the millennium will come with socialism or communism?

Vice and crime, ignorance, poverty, unemployment, disease—no one denies their existence. They constitute together the outstanding challenge to modern civilization. We all honor those who are giving their thoughts and devotion, their time and energies to the solution of these grave problems. This thought and effort, however, should never lose sight of the possible effects of the movements they inaugurate.

It is precisely at this point, as I see it, where medical social service is falling down. Is it necessary to invade the home and arrange the menu of the family meal, select the books to be read, the movies to be attended, lay out and supervise the amusements, allot the standardized hours for play, for sleep, for work, the family budget? Is it going to make any serious dent in the situation to bring in Mrs. Minitsky, who is tired at the end of a day after she gets her six children into bed, ascertain that she has a pendulous abdomen, a varicose vein, a relaxed perineum, faulty posture, suspicious tonsils, and a deviated septum, when there is already a long list of patients with urgent definite symptoms taking the time and strength of the available doctors? Be it remembered that these doctors are giving to this service their time and skill, the only goods they have to sell, and are doing it willingly in accordance with the traditions of their profession. Some allowance must therefore be made for a feeling of impatience and revolt on their part against the overzealousness of full-time, paid, lay social workers who ransack the city to find new problems for them to solve gratuitously.

Theoretically, it is highly desirable that every deviation from the normal in structure and function in every individual should be corrected, disease be abolished and the span of life indefinitely increased, leaving to the social philosopher the use to which these added years are to be put. Practically, however, we know that this is an impossible dream. When one realizes, as the qualified physician does even though the social worker does not, that every next individual one meets on the street, if subjected to the searching examination accorded to

\* Address before the Cattaraugus County Medical Society.



the hypothetical Mrs. Minitsky, is a potential subject for some kind of medical or mental adjustment or treatment, the hopelessness of the task which the paid social service worker brings to the doctor is at once apparent. As well try to empty the waters of the Atlantic with a spoon.

The medical profession has a background of centuries of thought and work in this field. The professional medical social worker was born twenty years ago as an amateur volunteer helper to the doctor. In their newly formed schools they are giving courses designed to enable their graduates to interpret the doctor to the patient! Soon we may expect the training and arrival of those who will be required to interpret the interpreters.

Lay organizations with a welfare program directed to the wholesale cure or control of some particular disease or disability frequently accuse the medical profession of a lack of sympathy and a failure to cooperate. And they hold up this want of cooperation as the explanation for their lack of success or slow progress.

Some experience with medical organizations has taught me that the cooperation these people seek is not cooperation, but unquestioning acquiescence in plans already formulated. On the grounds of "duty to humanity" these people seek medical volunteers, without whose services the elaborate superstructure erected on such service and financed in all its other working parts, would be meaningless and futile.

I would be doing a grave injustice to myself and my profession if I were to leave the impression that I question the motives or the fine crusading spirit of the social workers, or the good they do to the individual they are helping. But the good judgment of their enthusiasm to smash an evil quickly by direct action, untempered by the consideration of all the factors involved, is open to question.

#### PHYSICIANS AND THE PUBLIC HEALTH\*

HARLOW BROOKS, M.D.

New York

I speak today regarding those various points on which the medical practitioner is likely to be out of complete sympathy with the activities of lay organizations that have largely interested themselves in questions pertaining to public health.

At the outset I wish to state that I, and all my fellow practitioners, honor, respect and crave the assistance of every lay person and organization that is devoted to altruistic service to the public, to the alleviation of suffering, and to the betterment of mankind. Whatever I may say in the way of criticism is meant to be constructive. Our purpose is, and should be, identical. As to the methods by which this may be best accomplished, I believe that there is often room for argument.

If we may grant, at least for the sake of argument, that my point of view is to be that of the professional in regard to matters of health as contrasted to that of the amateur in health matters, I do not think that I am asking too much. I will consider also as professional health workers equal with ourselves all those who in their training in hygiene, bacteriology, pathology, anatomy, physiology and therapeutics have equaled the requirements in these subjects of a Class A medical college. In this assumption I feel that whether or not such persons have a medical degree and a license to practice, they are equipped to be grouped with us as professionals and not as mere amateurs.

\* Read before the Cattaraugus County Medical Society.

Sanitation, epidemiology and the executive features of public health work must be considered only as specialties in medicine, just as we practitioners group ourselves as neurologists, surgeons, internists, and so on. Without a basic training in the elemental medical sciences there cannot be true specialization in such work any more than the surgeon can be permitted to practice his craft without a careful training in physiology, in bacteriology and in the other essential fundamentals.

To such men the medical profession as a whole gives its sincere confidence and full cooperation. I do not know of any exceptions. We have every confidence in all those specialists in public health who are legitimately specialists. We have a quite natural suspicion of those lawyers, politicians, business men, preachers, and otherwise unoccupied ladies, grouped so loosely and so thoughtlessly as "social workers," who do not have basic training or understanding of those subjects to which we have so seriously and with single-hearted zeal devoted our whole preparation and life.

I was astonished the other day to read the statement of a worker in public health that the practicing medical profession was often found in conflict with public health activities. I cannot understand such a position unless the public health group in that instance was interested, as are some of the lay organizations, in activities basically contrary to the teachings of medical science and to the welfare of the public and its infirmities, just as some lay organizations advocate antivivisection, antivaccination, and various quack institutions and projects.

What does the physician in family practice resent in the activities of public health? He resents nurses doing the work of physicians, making diagnoses and dictating treatment which the family physician shall carry out. Do you blame him? He resents the underpaid, time-serving employee of the department who from the wealth of his inexperience minimizes to school children the work and ridicules the respect of their family doctor. He resents wholesale septic vaccinations and other evidences of legal but bad practice. He resents snap diagnoses in cases to which he has perhaps given serious and experienced study. He resents being directed to give treatments which he knows to be still in the experimental stage. He has often just cause for his complaints, because he knows himself to be the better man.

This is all correctable. Nurses are nurses until they have studied medicine and legally qualified themselves as practitioners of medicine. They should not be allowed to do as an agent of public medicine, work which the law does not permit them to do as private individuals.

Attention has been drawn to the great economic waste which results from the duplication of work prosecuted by the many lay directed organizations. This could be avoided if these activities were directed by professional, and not by jealous lay skill. Concentration under professional control would result in such economy that the money of the public would not be so wasted, and at the same time adequate salaries could be paid to the professional workers in this special field of medicine, so that they might properly compare their lot with that of the successful teacher or practitioner of medicine.

Employment of young physicians at meagre salaries robs the profession of the material from which it should recruit its general practitioners, now the greatest need of the profession. I often tell my internes at graduation that the worst thing that could happen to them would be to receive a salary on which they could live from some lay institution in which the professional experience does not reward the service; for many of them later in life would not dare to give up their salaries and

start out for themselves. Some of the brightest youngsters I have ever known have been ruined by such activities. They typify the non-professional controlled society. Some of them are notorious for their ruthless exploitation of the young physician.

Public medicine cannot be divorced from private medicine, except at a loss to both. The most potent and influential teacher of public medicine is the physician in contact with his patient. No public medicine can succeed that has not the endorsement of the average physician.

The value and influence of the average practitioner is beyond the comprehension of the executive who is himself not conversant with the details of medical practice, or who has through lack of experience estranged himself from the profession. He is likely to develop from his ignorance of real medicine and its problems a superiority complex of particularly inexcusable type. This is the disease from which many public health workers suffer; they are the ones who criticize the average physician.

We of the medical profession believe that a license to practise should be granted only after four or more years of study in an accredited school, superimposed on a preliminary education of no mean extent. That this idea is not held by the public at large is only too vividly shown each year by all manner of cults, often backed by the clergy, well-intentioned philanthropists, financiers and people of all sorts, intelligent and otherwise.

If we are correct and well founded as to our requirements as regards the average practitioner, why is it that the practitioner of public health may be self-anointed? Is the public to be less protected than the individual?

## REPORT

### of the Board of Trustees of the American Medical Association to its House of Delegates

An investigation was made during the year of ten of the more important health demonstrations that have been set up by volunteer health organizations in various parts of the United States. It was evident from the replies that in some communities serious disagreement has arisen between those conducting the demonstrations, or volunteer health agencies, and the members of the local medical profession. The principal objections are well expressed in a communication signed by sixteen physicians of one county in which a demonstration was conducted, from which the following is quoted:

"The object supposed to have been kept before the demonstration workers was that they do their utmost to preserve, in the patients' minds, respect for their family physicians. They did not always succeed in doing this, partly through their being carried away at times by enthusiasm for demonstration work, during which the physician was lost sight of, partly through their emphasizing the idea that the demonstration was being carried on by men ranking as specialists in pediatrics, thus giving the patients the idea that they could get better service than their family physicians could give them; . . . The result was that the demonstration employee soon neglected almost entirely to make any effort at keeping up any contact or liaison between patient and physician and the inevitable result finally was that patients did tend to lose respect for the family physician and looked entirely to the demonstration for examination, advice and treatment. The obvious result of the demonstration was that not only the indigent but the well-to-do also went to the clinic for examination, advice and treatment because they came to look upon it

as a place where they could secure the expert service of specialists free of charge, and with a natural end-result that all were pauperized to that extent and not ashamed of the fact."

An earnest protest was made by another county medical society, urging that the demonstration in that county be not continued after the termination of the five-year period for which it was set up, asking further that the medical society be represented on the county board by five physicians, to be chosen by the society. Notwithstanding this protest, it was later announced by the organization providing the funds that the demonstration is to be continued, the county board having accepted an offer to donate over \$87,000 for its continuance, the county to appropriate \$50,000 for the same purpose. There has thus been created in this county a very serious situation, in which the people are arrayed against the medical profession and committed, through their county board, to a continuation of a health demonstration which has been most unsatisfactory to the physicians of the county, 90 per cent of whom are said to have declared themselves opposed to the manner in which the demonstration has been carried on. Should such an attitude, so at variance with the ultimate interests of the public and the medical profession, be manifested in other localities, large sums of money being appropriated to carry on health work in a manner obnoxious to the local medical profession, it is bound to create a situation that will be grave indeed.

### Value of Functional Renal Tests Properly Interpreted

Edwin Beer, New York (*Journal A. M. A.*, April 14, 1928), has tested out all the important procedures, e. g., methylthionine chloride (methylene blue), Albarran's polyuria, phlorhizin, cryoscopy, Ambard's coefficient and MacLean's modification, and has found that the only tests that are reliable and simple to perform are the indigo carmine and the phenolsulphonphthalein excretion tests and the chemical analysis of the blood. All three of these may be used in every case. His experience agrees with that of Wildbolz that a good indigo output means a good functional kidney. The same applies to phenolsulphonphthalein. But the difficulty arises in interpreting what a poor output of these substances denotes. The indigo test is the most sensitive to changed kidney conditions; then comes the phenolsulphonphthalein test, and finally the blood urea determination (incoagulated nitrogen, uric acid, creatinine), the least sensitive to slight renal impairment. A minimal output of indigo or phenolsulphonphthalein may be present, therefore, without any blood urea retention; and this occurs most commonly in obstructive conditions (such as prostatic adenoma or stricture) in the lower urinary tract. By adequate drainage these dye excretions return, and the blood urea becomes quite normal provided the kidneys can be resurrected. If, on the other hand, they are not resurrectable in their function, these changes will not take place. In doubtful cases, one must proceed slowly, as the process of resurrection may be very slow and take weeks or months before an operation of any magnitude is permissible. Here one must individualize carefully, and the clinician's experience is the deciding factor as to when and how he must proceed. In addition to these two classes of cases, there is another group in which the output is minimal or absent and the blood urea raised and in which one kidney is badly diseased, affecting by reflex or toxic influences the functional activity of the second adequate kidney. This is seen in unilateral infected hydronephrosis or pyonephrosis, and for years it has been recognized that primary nephrectomy in this type of case may be followed by fatal uremia. If a primary nephrotomy is performed, one sees with almost perfect regularity a return of adequate indigo, phenolsulphonphthalein excretion and a drop in the urea retention, and after a few weeks a successful secondary nephrectomy is borne without any danger of uremia, as the second kidney has come back to normal or almost normal functional value. A fourth group of cases showing minimal or zero dye excretion is associated with bilateral kidney disease—bilateral nephrolithiasis (usually infected) and polycystic kidneys—and in these cases the greatest caution must be exercised, especially if the blood urea is high, lest one operate on kidneys that are irreparably injured.

### Status of the Maternity and Infancy

Forty-five states and the territory of Hawaii are now co-operating under the maternity and infancy act. The act will expire June 30, 1929.



## Contemporary Progress

### Modern Preceptorships

C. R. Bardeen, Madison, Wis. (*Journal A. M. A.*, April 14, 1928), says: In the endeavor to improve medical education in this country, its control has passed from the medical profession to the universities, from an emphasis on art to an emphasis on science. The science is essential as a basis for the art. Fundamental training in the science can be well given only at the universities. The art cannot, however, be well taught if the teachers of science at the university do not work in cooperation with and have the hearty cooperation of those who are actively practicing medicine as an art. To the degree that the universities now in charge of medical education fail to seek such cooperation, they are likely to fail in teaching the art. So far as the organized profession fails to give its cooperation in every practical way, it is remiss in one of its most time honored obligations. The problem of active cooperation between pedagogue and practitioner in teaching the art of medicine is far from simple. The family practitioner has been, is now, and promises to continue to be the most important agent in applying medical science to individual needs. It has recently been estimated that a good general practitioner is capable of handling 90 per cent of the illness for which patients seek medical advice. To be a competent family practitioner, however, a man must be trained not only to recognize and treat the diseases that fall within this group but also to recognize the diseases that fall without this group and to know where to seek proper aid for patients suffering from them. While recognizing that the percentages given are merely rough approximations, it might be said that the general practitioner can at best be only a 90 per cent independent under present conditions and at the same time be competent. To be competent to treat the 90 per cent of illness coming within the range of general practice, the student must first of all be given such a training in the principles of the fundamental sciences on which medicine is based as to give him a scientific background on which to base his art. This scientific background should not be a static one but a dynamic one capable of growth. For this scientific training we must depend on specialists in science. In the medical school, however, we should expect the teachers in the preclinical branches in courses intended to prepare men for general practice to present the various sciences not as highly technical isolated sciences but as parts of an all round knowledge of the anatomy, physiology, pathology and hygiene of man. The basal training in clinical medicine must also be given largely from the scientific standpoint of general principles. For this we must depend mainly on specialists in clinical teaching, with time and facilities lacking to those active in general practice. Such specialists should, however, present their subjects as parts of, not as apart from, clinical medicine as a whole. They must keep in active touch with preclinical science on the one hand, and on the other hand with the art of applying scientific knowledge to the diagnosis, treatment and prevention of disease. In the training of students in the art of medicine, close association of student and teacher is essential. The student learns to diagnose by being made responsible for making diagnoses, to treat disease by being made responsible for the care of patients, to command the respect and confidence of the sick by the opportunity to earn it. The more responsibility the student is given, the closer must be his association with the teacher. This close association is essential for the student that he may learn by accurate observation of example. It is essential for the teacher, because the responsibility for the patient which he transfers to the student does not lessen his own clinical responsibility but rather increases it. The main problem in medical education from the standpoint of the practice of medicine comes at the period when the student is beginning to assume clinical responsibility. It is the problem of adequate opportunity and competent supervision. In our present medical curriculum it comes in the fourth year of the medical course, preceding the intern year. The best methods of meeting the need of the personal equation in clinical education will doubtless vary with the institution. At Wisconsin the first step in this direction was to individualize the fourth year of the medical course by omitting all class work. The first year of the course is devoted essentially to anatomy and physiology, the second year to pathology and hygiene, the third to the elements of clinical medicine. By considering class work into the first three years of a four year medical curriculum, the fourth year of the course is left free for individual work under supervision. The fourth year extends from the end of the third year until graduation the following June and comprises forty-eight weeks divided into four quarters of twelve weeks each period. The class is divided into four sections, and different work is assigned to the members of each section. During the year, however the students in each section complete essentially the same work. Only one or two students work at a given time under a given instructor. In this way close personal relations are established, and the student can be allowed considerable responsibility because the instructor has the work of only

one or two to supervise. Of the four quarters, this year as last, one is called a medical quarter, one a surgical quarter, one a general quarter, and one a preceptorial quarter. During the medical quarter each student spends six weeks in the wards of the Wisconsin General Hospital under the supervision of a member of the medical staff, three weeks at the Mendota State Hospital for the Insane, and three weeks at the Children's Hospital and at a dermatologic clinic in Milwaukee. During the surgical quarter each student takes work under the supervision of the surgical staff at Madison in general surgery and in the surgical specialties. During the general quarter each student spends from two to three weeks in the obstetric service of the Chicago Lying-In Hospital, two weeks in studying methods of public hygiene under the auspices of the state and city health departments, two weeks in making physical examinations of students entering the University of Wisconsin, and the remainder of the time in elective work. It is planned next year to establish a second preceptorial quarter in place of this general quarter and to distribute the work of the general quarter among the other quarters. During the preceptorial quarter, a student elects work under the general supervision of an approved preceptor who is in a position to provide the student with suitable hospital, laboratory and library facilities for effective work on his service and that of his associates. The supervising preceptor may select such associate and assistant preceptors as he believes will add to the welfare of the student during his service with him. The establishment of this preceptorial service has led to the organization of teaching centers in various parts of the state for cooperation with the medical school of the state university. There are at present more extensive facilities of promise for the preceptorial work than students to accommodate. A selection in establishing associate teaching centers has had to be made. In making the choice the reputation of the clinical centers selected for proficiency and idealism in medical practice, by the willingness of the leaders at these centers to co-operate in the work, and by the personal desires of the students entering on the service have been guides. Bardeen is certain that there are other centers than those chosen equally capable of offering good training to the students, and an extension in the number of such centers is anticipated as the work grows. Thus far students have worked at eight different associate teaching centers, all situated in cities of between 6,000 and 30,000 inhabitants. The men invited to organize associate teaching centers of this type are called the preceptors in charge. This preceptor is made responsible for arranging the work of the student assigned to him for the quarter. Since only one or two students are as a rule sent at a time to an associate teaching clinic and several associate preceptors are available for each student, the supervision of the students' work may be organized in such a way as not to constitute a burden on any member of the group. During the period covered, the clinical apprentice will be expected to pay more attention to opportunity than to hours. He is expected to attend staff meetings and to avail himself of other similar opportunities to broaden his knowledge of medicine.

### Bacterial Infection and Accidental Hemorrhage

At a recent meeting of the Edinburgh Obstetrical Society Dr. F. J. Browne gave an account of some interesting experimental work carried out by him upon the aetiology of accidental hemorrhage and placental infarction. He found that in many of the cases of accidental uterine hemorrhage in the puerperium coming under his observation a history suggestive of chronic nephritis could be obtained.

In endeavoring to reproduce the clinical conditions experimentally he induced a chronic nephritis in rabbits by continued poisoning with sodium oxalate, by the methods carried out and investigated by Shaw Dunn, Dibble, Haworth, Jones, and McSwiney at Manchester. This procedure will set up a chronic tubular nephritis, whose incidence and course can be followed by renal functional tests, which ultimately proceeds to renal fibrosis. Dr. Browne found that if such animals were allowed to become pregnant, and during the pregnancy a further small dose of oxalate was administered—which has the effect of causing an exacerbation of the nephritis—and this was followed upon the next day by the intravenous injection of a small quantity of a saline suspension of *B. pyocyaneus*, the result in the eight cases in which the experiment was tried was the occurrence of uterine hemorrhage with the production of placental infarcts.

Further experiments showed that the bacterial factor alone was sometimes sufficient to produce this result in the presence of damaged kidneys, and that it was associated in such cases with an exacerbation of the nephritis as evidenced by a rise in the urea content of the blood. The general result which emerged from other experiments was that whenever uterine hemorrhage in the gravid animal was successfully produced by any of the methods tried it was associated with an exacerbation of the nephritic condition, if previous chronic nephritis was present. It was also found that in non-nephritic animals the production of an acute nephritis sometimes sufficed to produce hemorrhage.



The main outcome of these experiments, which are of great interest in connection with the clinical problem, is to show the close relationship which may exist between the accidental hemorrhage of the pregnant animal and toxic states. It is evident that the latter condition is the important factor and the mere means by which the kidney was damaged are of less significance, although for the purpose of experiment no doubt a certain technique will produce the grade of injury most likely to be associated with the hemorrhage. An animal with existing renal insufficiency has no reserve excretory power, and any factor, intrinsic or extrinsic, causing further damage to the kidneys will increase the effects of the renal insufficiency—the toxemia, to use a much abused word—whose existence is most conveniently demonstrated by the associated increased head of urea in the blood. Such additional damage might be caused in a variety of ways. Dr. Browne has employed, inter alia, injections of *B. pyocyaneus* and notes that the coliform group of organisms are especially potent in producing a positive result. The toxicity of this group for the rabbit and their especial tendency to produce renal lesions has long been recognized, and typical glomerulonephritis has been caused by their injection, both alone and in association with known toxic substances. We may assume, therefore, that the organisms in question in these experiments have acted chiefly as damaging agents upon an inefficient kidney and not in any specific way upon the uterus, and we do not, nor do we suppose does Dr. Browne, draw any inferences as to spontaneous infection, as such, being a factor in the production of this type of hemorrhage in the human subject.

The suggestive work outlined above raises the question once again, and in a more specific form, of the exact statistical relationship of albuminuria and renal insufficiency to accidental hemorrhage, and the possibility of including at all events certain forms of this condition amongst the toxemias of pregnancy. We are not aware of any extensive investigation of this matter, but no doubt the records of our maternity hospitals contain abundant information as to the former point and modern methods can quickly reply to the latter. In the meantime these extremely important experiments point out the necessity, nowadays fortunately well recognized, of the increasing surveillance of the pregnant woman and the careful examination of renal function in all cases in which a previous pregnancy has been associated with accidental hemorrhage or where renal damage is known to exist.—(*Lancet*, May 26, 1926.)

#### Extensive Vivisection No Longer Necessary

Perhaps that advantage of medical movies which appears most spectacular to people outside the profession is the one which permits the utilization of motion pictures to record animal experimentation. That this is a truly wonderful development and one which may rightfully be considered the answer to an antivivisectionist's prayer will be readily apparent upon considering the following facts: Heretofore each medical student experimented upon numerous laboratory animals such as dogs, cats, turtles, etc., in an attempt to learn by direct observation the truth of certain physiological facts. Depending upon the student's intelligence, or lack of it, the amount he learned from the experimentation varied from little to perhaps a little more. In any event the only 100% fact in the case was that the animal was dead at the end of the experiment. It is barely possible that the antivivisectionist could find room for reasonable doubt as to the efficiency of such research. However, in the hands of a skilled technician the experiment may be made 100% effective. This is by reason of the fact that the trained physiologist does the experiment in an expert manner and its recording upon film makes it repeatedly available at many times and in many places without the repetition of the experiment at the cost of other animal lives. If the antivivisectionists were to use their funds and energies along the lines of advocating and aiding the production of medical movies their humane endeavors would be more speedily accomplished and I am frank to say that I think more physiology would be actually learned.

J. F. Montague, M.D., F.A.C.S.

#### Orris in the Etiology of Asthma and Hay-Fever

R. M. Balyeat (*St. Louis Journal of Laboratory and Clinical Medicine*, March, 1928) shows that several patients with hay-fever and asthma react to orris root (rhizome), and establishes an etiological relationship between face powders containing orris root and these two diseases. Orris root is used in the manufacture of face powders, creams, bath powders and salts, tooth-powders and soaps, and orris oil is used in preparing synthetic perfumes. The skins of orris-root-sensitive patients are sensitive to most of the scented cosmetics. The process of desensitising is similar to the one used in desensitising patients who are sensitive to pollen. Orris-root-sensitive patients who complained of frequent colds in the winter, after receiving specific orris-root therapy, usually reported freedom from winter colds.

## The Physician's Library

**The Opium Problem.** By Charles E. Terry, M.D. and Mildred Pellens for The Committee on Drug Addictions in collaboration with The Bureau of Social Hygiene, Inc., New York, 1928. Published by the Committee at 370 Seventh Avenue, New York City.

Three years have gone to the testing of this epoch-making volume, *The Opium Problem*, and to the formation of the book many years more than three. The *Opium Problem* is an outgrowth of a report to the Committee on Drug Addictions, a report made in the beginning solely for the purpose of orienting the Committee. Now the details of every aspect of this study have been tried out: extent, development of the problem, etiology, general nature, pathology, symptomatology, types of users, treatment, and control international as well as national, state as well as municipal.

It was just three years ago that a paper-bound volume—copy "No. 24"—of some 781 pages was sent me by Dr. Charles E. Terry of The Committee on Drug Addictions, and the thermostat of my pride shot dangerously upward. In the "special notice" by which it was prefaced each fortunate possessor of this volume was told that his copy was "one of a limited number distributed for certain purposes by The Committee on Drug Addictions", that it was to be "considered in the nature of a manuscript", and, finally, that the Committee, and the authors, Dr. Charles E. Terry and Mildred Pellens, desired that the possessor should not quote from it or "publicly show or review it". One was merely steward for a copy that might at any time be recalled. Only one statement in this "special notice" was as substantially reassuring as the volume itself: when the book was officially published a copy would be presented to the owner of the limited, unofficial edition.

So thorough were the years of work which preceded even the unofficial publication of the volume, so brilliant the years of indirect experience for the preparation of such a study that Dr. Terry spent in practice and surveys in Jacksonville and elsewhere, that the chief work of alteration in the officially published book is not one of change but one of addition. . . . The official book has had added to it not only invaluable illustrative plates but also some 261 pages which include a comprehensive bibliography and a carefully arranged index. To one error in the numbering of the plates attention should be called, for "Plate III" opposite page 278 should be numbered "Plate II". Nothing unconsidered was published in the limited edition, and collation of the two volumes shows that but little has had to be reconsidered. The unofficial volume has stood the test of the barrage of expert scientific and private criticism for which its authors asked.

Here at last is an investigation without the limitations of any bias whatsoever,—social or psychologic or medical. One good illustration of the book's non-political, unprejudiced outlook is that for the first time, and without rancor, the story of the international efforts at control has been told on a straight fact basis without interpretations or comments, and without any attempt to place responsibility on nations or on individuals. The chapters are not hampered by the frothy moral emphasis of the popular book on the opium problem, nor are they limited by being a physician's handbook on the treatment of drug addiction. These thousand pages of research are never "political", maintaining, as they do, a motility unhindered by being written from any point of view national or international, or out of any "school" except that of the university of the scientist who is at one and the same time sociologist, medical man, research worker, and humanist.

In the Introduction of *The Opium Problem* is this statement: "Among the western nations, the United States seems to have acquired the reputation,—whether deservedly or not need not be considered here—of being more widely and harmfully affected than any other." At no time do the authors of this volume draw any conclusions on this point, for their business does not lie with deduction. In fact the student of the book is warned time and again not to reach inferences which carry partisan, restricted or incomplete implications as far as the nature of the condition of drug addiction and the causes which lie behind it are concerned.

Having decided to employ any terms in general use, nevertheless the authors state their independence of any "school of thought or theory" . . . . One of the most valuable aspects of this volume is that where much in the understanding of drug addiction and its treatment is nascent, there is no attempt on the part of the authors to force the undeveloped. The chapters on etiology, pathology, and treatment are incomplete, and to their authors as well as their readers unsatisfying. Yet this fact is useful indicating as it does the conclusion which exists in relation to phases of the opium problem. It is important to note this incompleteness, for these chapters contain practically all of the available material, certainly all of any importance, but still fail

to answer the questions raised in the reader's mind. It becomes evident, too, in regard to the treatment of drug addiction today that it is essentially empiric and without demonstrable physiologic or anatomic basis, for those who treat drug addiction, however, scrupulously, have nothing but their experience to depend upon.

Recalling the language of the usual writing or popular point of view on drug addiction, it is not an exaggeration to say that the one thousand pages of this book constitute for student and addict alike an escape from moral cant into scientific kindness. For in the slow revolving of these chapters occur such sentences as these: "There is a popular belief extant that practically anyone can detect the co-called 'dope fiend', that he is a miserable, emaciated, furtive individual with pinpoint pupils, trembling hands, sallow complexion and characterized by a varied group of moral attributes, needing only to be observed to render identification of the condition complete. As a matter of fact not even one of these alleged characteristics need be present and it is safe to say that in many cases only one or another of them exists and by no means would suffice to give the ordinary observer an idea of the true situation. It has been reported that for many years husbands and wives, to say nothing of other members of a family, have lived in complete ignorance of the existence of this condition in one or the other and that quite possibly the average physician, unaccustomed to dealing with the condition, might have difficulty in determining its existence."

Not only do the authors call attention to error and difficulty in diagnosis of the opium user, and in treatment, but also they provide careful criticism, considerate of the helplessness of the average addict, of those factors in clinics which keep men and women away from them, the crowding of the clinic, the publicity, the arbitrary dosage and reduction, and the unnecessary amount of personal information which is required of every applicant.

It is probable that for the reader, eager for wider and sounder education along these lines, one of the most valuable of the fourteen chapters of *The Opium Problem* will prove to be Chapter II on *The Development of the Problem*—the first sequential handling of the history of opium. Those who look upon opium as both the misfortune and the blessing of modern times, will be amazed to trace the early history of its use through references found in Greek and Latin literatures, its unrestricted popularity in the Middle Ages, and the developments of its use in therapy, —all told a known history of some two thousand five hundred years.

Out of the data of this chapter, which owes much to the articles of Dr. David I. Macht of Johns Hopkins in the *Journal of the American Medical Association*, comes the conclusion that there has been an alarming growth in the use of opium due even more to its integration in the emotional and social life of the world than to actual physical causes. Very justly do the authors of *The Opium Problem* brush aside any long-drawn-out discussion of accuracy or inaccuracy with regard to figures in the surveys taken, and call attention to the complexity of the direct and indirect influences at work, and to the necessity for "intensive study from medical, psychologic, sociologic, and possibly other angles." And they complete Chapter II with this statement: "If one considers the many influences cited and their relation to deep-rooted human instincts and emotions and the general receptivity of an ignorant public, one must conclude without the aid of statistical data of any kind that chronic opium intoxication affects a large number of our people."

Interested motives have, of course, played their tragedy-making part in the integrations of this disease of civilization, for that is what opium addiction in any of its forms might well be called. None the less, not a little surprise is experienced when, thinking of other lands as the source of our supply, it is discovered that opium has recently been made from white poppies cultivated for that purpose in Vermont, New Hampshire and Connecticut. The development of this problem may have covered centuries, even ages, of the past. Its penetrative power—perhaps in part due to the momentum it has developed through continuity—is now evident in every country of the modern world, big and little, civilized and uncivilized. Opium may have been used for cure but its use has also been for purposes of euphoria, and its relation to the community socially has been illegitimate as well as legitimate. It may have met genuine need, as for example in cancer and tuberculosis, nevertheless it has also fed and increased vice. Like fire, opium is to be seen both as menace and as blessing.

The practical service of this book is gift enough to a public, medical and lay, which has long wanted such an authoritative volume. And to *The Committee on Drug Addictions*, consisting of Katherine Bement Davis, Dr. Stanley Cobb of Harvard, Dr. Mendel of Yale, Dr. Richards of the University of Pennsylvania, Willard S. Richardson of the Laura Spelman Rockefeller Memorial, Dr. Snow of the American Social Hygiene Association, and Dr. Wallace of the Bellevue Hospital Medical College, the public owes a debt of gratitude for the years of support and direction

which the members of the Committee have given to the work of the authors. Also, within the quiet terms, patient study, and accurate detail of the book lies a gift as great or greater than the co-called "practical service": evident—even if somewhat covered over by scientific terminology—in its human sympathy.

Those things for which the authors of this book, and the supporting Committee, hope, will be realized inevitably even if slowly, for the work behind *The Opium Problem* is certain to be the most important influence yet known—more important even than an international conference because free from the "jokers" incident to political life—in increasing and directing scientific research, in bringing about control of unscrupulous and interested motives, in reducing the use of opium to the "minimum consistent with its proper therapeutic employment" and in stimulating orderly thinking about and study of the problem.—Jeannette Marks (Author of *Genius and Disaster*).

**Diseases of the Skin.** Richard L. Sutton, M.D. Seventh edition. 1394 pages. C. V. Mosby Co., St. Louis, 1928.

This massive text book has been rewritten and rearranged, making one of the most complete works of its kind in print. Dr. Sutton in his new edition has made many additions, including occupational dermatoses and those related to allergy. The latest developments are found in this volume; it is all sound matter as theoretical matter has been avoided. There are 1237 illustrations and eleven colored plates, all of them of great assistance to the student and practitioner. For the busy practitioner this book will have a strong appeal since it is so well arranged that one can readily find what is desired. The publishers have made this a remarkable piece of printing.

**Clinical Medicine.** By Oscar W. Bethea, M.D. Pp. 700. W. B. Saunders Co., Philadelphia, 1928. Price, \$7.50.

The author has attempted to consider clinical medicine from the standpoint of patients treated in homes rather than in hospitals; the facilities are naturally limited in the former and it is this group that Dr. Bethea has aimed to help. He has given in concise form the diagnosis and treatment of about one hundred of the most common diseases. The text would be easier to read if the headings of special paragraphs were in italics. The author is not always down to the minute in his writing. He uses the word "tubercular" in many instances where he should use "tuberculous." For example, he speaks of tubercular peritonitis, tubercular laryngitis, etc. He is rather addicted to complex prescriptions. The use of convalescent serum is not mentioned for measles, nor does he mention the possibility of encephalitis complicating this disease. The serum treatment of scarlet fever is barely mentioned. Perhaps it would have been well to deal with pyelitis under the term pyelonephritis rather than to give separate consideration to each. Hexylresorcinol is not mentioned in the list of drugs for cystitis. In the preface the author states that he deals with about one hundred of the most common diseases coming within the province of internal medicine. If that is his purpose, why does he include such diseases as tularemia, leprosy, pellagra, etc.? While this book is of value to the practitioner, it impresses the reviewer that it consists in places of the author's old lectures which he has not taken sufficient care to bring down to date.

**The Physician Throughout the Ages.** A Record of the Doctor from the Earliest Historical Period—Embracing a General Survey of the Practice of Medicine—The Social History of the Doctor—With Medical Chronology and Biographies of Outstanding Physicians (To be issued in 2 volumes). Volume I. By Arthur Selwin-Brown, B.Sc., M.A., Ph.D., assisted by Distinguished Medical Specialists. Leather. Price \$25 per set of 2 volumes. Pp. 848, with illustrations. New York: Capehart-Brown Company, Inc., 1928.

This work is sponsored by the Physicians' Home, Inc., and the proceeds from sales will go to the fund of that institution. Although the author is not a physician his cultural equipment for the great task that he has consummated is impressive, and he has had the active cooperation of many accomplished experts, among them Victor Robinson. The endorsement by Dr. Robert T. Morris of the work's scholarship and value as an outline of all history as it relates to social development, and the fact that its purchase will aid in the maintenance of a home in which physicians incapacitated by age or illness become guests of the profession should enlist hearty interest.

#### Medical Corps Triumphs

What the Army medical corps has done to improve health is illustrated by the fact that while 7,000 soldiers out of a small army died of smallpox in the Civil War, we lost but 14 soldiers from that disease out of four millions of men in the World War. Our medical corps' prophylactic measures cut down the typhoid casualties from 12 per cent of the total force in the Spanish-American War to one-twentieth of one per cent in the World War.